

# Amazing *For The Commodore* AMIGA

COMPUTING

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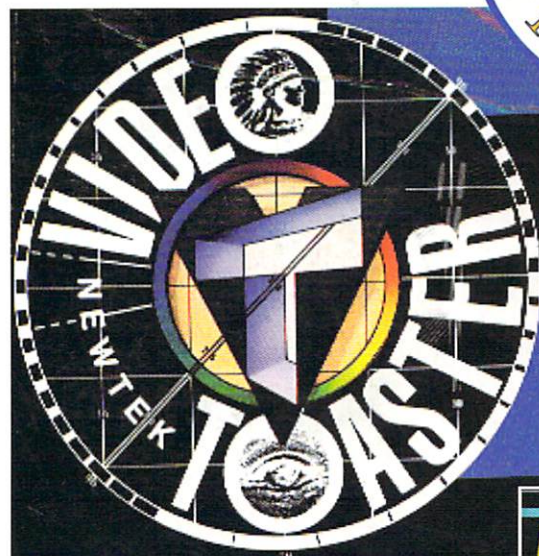
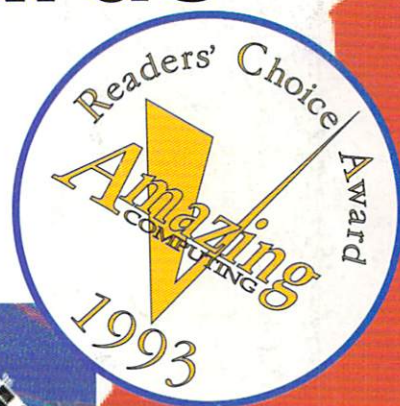
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# 1993

# Readers' Choice Awards



NewTek's Video Toaster  
wins big!  
How does LightRave  
measure up?.





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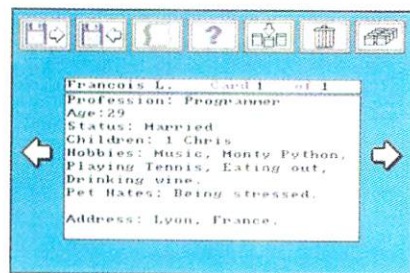
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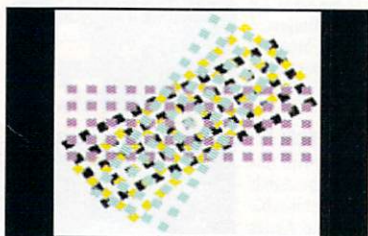
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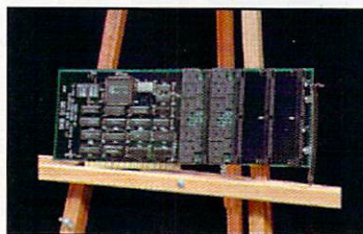
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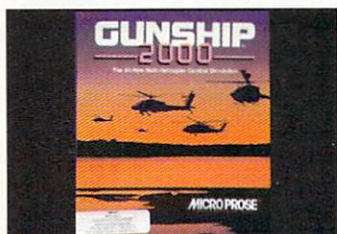


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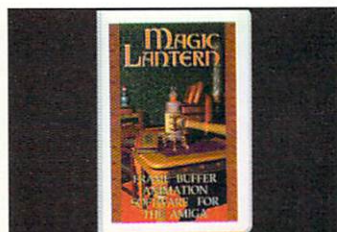


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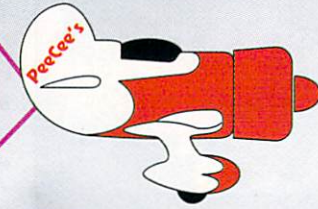
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# AMIGA NOTES

## ASDG Saves the day for seaQuest

ASDG recently played a key role in bringing NBC's new series, *seaQuest DSV*, on the air for its premiere. In *seaQuest*, all the scenes "shot" outside the submarine are in fact digitally created, computer generated images. The producers at Amblin Entertainment had specified the most accurate colors for these images to achieve the most dramatic and realistic underwater effects possible. Selecting extremely subtle shades of dark blues and greens, the thought they had achieved what they were looking for. However, it was discovered after many irreplaceable months of effort and expenditure had gone into their creation, that these shades of color could not be discerned properly on broadcast television.

Enter ASDG.

The crew at ASDG, who are fast earning a reputation around Hollywood as ace problem solvers, were called and an Amblin Entertainment representative flew to Madison with the unusable film footage. ASDG's talented team went to work and invented a way to solve the problem. And they did it over a weekend!

ASDG came up with a method of increasing the apparent color fidelity of the broadcast signal. Not only was the work salvaged but

the realistic images that the producers had originally sought were achieved. ASDG was aided by the fact that the production company was already using ASDG software technology, and by the fact that ASDG had encountered a similar challenge in their work for the production of *Babylon 5*.

ASDG executives point out that their growing reputation in Hollywood as innovative problem solvers goes a long way to keep the Madison firm right on the cutting edge of special effects software development.

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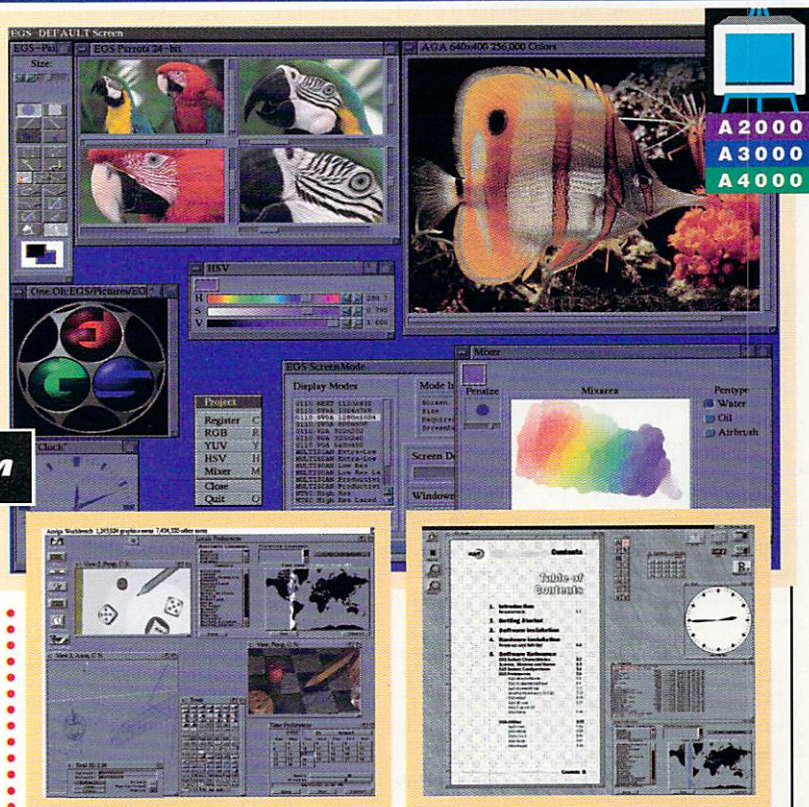
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# EDITORIAL CONTENT

## Good News for CBM, the Amiga, and CD<sup>32</sup>

The United States' sales division of Commodore has had two record sales quarters in a row. But don't look for any announcements. Commodore is as secretive about their division sales figures as McDonald's is about its special sauce. The fact that Commodore's results from all divisions for the quarter before this last one showed a loss, could be one reason. If CBM has been pushing Europe and not the U.S., and the U.S. has succeeded in spite of the fact, making it public may put too much pressure on individuals in CBM's International offices.

But, the good news from the U.S. division is as certain as we can get in this industry. I received the information by several highly-reliable-unnamed-sources-within-the-company-who-do-not-want-to-be-quoted-and-would-deny-ever-saying-anything. The fact that I have been told this by more than one individual, leads me to believe it is true.

While this is great news for CBM and Amiga users, it does have a downside. If CBM can sell product, surpass quotas, and be profitable without doing any additional marketing, how are we going to convince Commodore International that they must promote the Amiga in North America?

The fact is, Commodore is selling all the Amiga 4000's and 1200's they get and they continue to increase their draw. According to the same sources, Amiga 1200's and 4000's will be available this holiday season in sufficient quantities. If all of this continues to work, we may be able to convince Commodore International that there is a North American market—as long as we do not mention CD<sup>32</sup>.

Again, according to inside sources, the Amiga CD<sup>32</sup> is selling very well in the U.K. and Europe. The news from England confirms reports of a surge of support from new developers. Unfortunately, as long as CBM is selling all the Amiga CD<sup>32</sup> units they can build in Europe, we will not see them here. The European markup is significantly higher than the U.S. margins. CBM has found a way to make money and every indication is that they will continue to do so.

The Consumer Electronics Show in Las Vegas in January has been designated by CBM as the official starting date for a CD<sup>32</sup> push in North America. Sources claim that Commodore is preparing to use CES as a springboard for both press and dealer attention.

Rumors have been circulating about companies who are selling CD<sup>32</sup> units in North America by importing them from European distributors. Unfortunately, the only CD<sup>32</sup>

units produce by Commodore so far have been PAL units. Commodore has a fix to make these machines NTSC compatible. If you are buying a CD<sup>32</sup> unit for use in North America, first make certain the unit is NTSC compatible and that the company performing the switch is sanctioned by CBM. This will assure that your warranty remains intact.

### CD-I

Things are beginning to happen in the other main interactive media platforms. Phillips recently launched a half-hour infomercial for CD-I and placed it on the Discovery Channel, the Science Fiction Channel, and others, at times ranging from 2 AM to 5 AM.

The futuristic and highly-polished presentation shows a befuddled individual searching for the meaning of life. His search brings him to THE GREAT WALL whose entire purpose seems to be to sell him a CD-I.

In all fairness, I found the infomercial insulting and demeaning. References were made to games and developers, but no third-party name was ever used. The slick professional look of the piece suffered from a lack of content. The infomercial hinted at features such as Hollywood movies on disk, but never clearly explained that the additional option would be almost fifty percent of the purchase price of CD-I.

The GREAT WALL was assisted by Help, played by a lady in white. While always pleasant, she rarely answered our protagonists questions directly. Some other viewers have noted that the entire format and presentation for CD-I could mislead a lot of users in how the machine is used and what is available. This has not stopped Phillips from placing a lot of money into the project.

Appearing about three times during the major infomercial is a smaller commercial with a toll-free number to call for information on CD-I and the location of a dealer close to you. Phillips has placed this smaller commercial on ESPN and other channels for additional exposure.

I am surprised few people have questioned why Phillips would put so much effort into a product that is now two years old. But what else are they to do as 3D0 hits retailers shelves across the country.

### 3D0

The first 3D0 platform is a console created by Panasonic. It sells for \$699 at the local Electronic Boutique. When I asked what titles were available, I was told, "It only has one title. The one that comes with it."

3D0 may be making headway in a different area. As we hear about the different "Baby Bells" who are creating mergers with cable companies, it is important to note that the main topic is the new interactive television and the digital information highway. What is interesting is that AT&T is not far down the list of companies who have actively supported and sponsored 3D0.

The effort by Bell Atlantic and TCI to merge creates a real possibility that an expensive 3D0 device may become the interface these companies decide to use to control software and information technology in the years to come. This could make the originally AT&T monopoly seem like meager beginnings.

### Commodore's Response

A recent article in the *Philadelphia Inquirer* mentioned Commodore U.S.'s new general manager, Geoff Stilley (who was characterized as "a former fighter pilot") and John DiLullo, marketing director, and their marketing plans for CD<sup>32</sup>. The piece by Anthony Gnoffo Jr. stated, "Instead of prime-time TV and slick magazine ads, the company will rely on a mix of infomercials, promotional events, and other low-cost tricks to sell the CD<sup>32</sup>."

In this race for supremacy as the interactive platform, Commodore still maintains several key advantages. At \$399, CD<sup>32</sup> is far less expensive than its competitors. CD<sup>32</sup> is based on over eight years of Amiga development with a virtual army of programmers who both know and prefer the Amiga platform. And, unlike CD-I, CD<sup>32</sup> is based on faster CD-ROM drives and access times.

If Commodore can combine the strength of the Amiga and the potential of CD<sup>32</sup> into a unique and appealing infomercial, they will have a winner. Even if the North Americans miss this holiday season, there is good evidence that CD<sup>32</sup> could be a major buy through the rest of the winter.

European sales are pushing CD<sup>32</sup> units into homes and creating a market for software. CD<sup>32</sup> add-ons for the A4000 and A1200 promised at the Pasadena World of Commodore Amiga could be ready soon. CBM could have a unique "double push" in January when they will have CD<sup>32</sup> units to sell in quantity. It just may be that this winter will be Commodore's hottest season for some time.

Sincerely,  
  
Don Hicks  
Managing Editor



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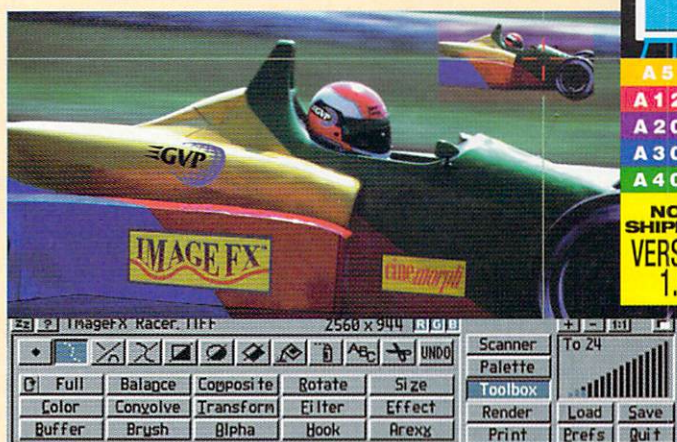
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# NEW PRODUCTS

*and other neat stuff*

## **A1230 Turbo+**

The A1230 Turbo+ is a high-performance 40MHz 68EC030 accelerator that supports up to 32MB of 32-bit RAM expansion and a 40MHz 68882 Math Coprocessor. *Great Valley Products, 657 Clark Avenue, King of Prussia, PA 19406, (215) 337-8770. Inquiry #200*

## **A1291 SCSI Kit**

The A1291 SCSI Kit is the first expansion module for the Performance Series II products. This module adds a high-performance external DMA SCSI interface to a Performance Series II peripheral and uses the latest in active termination technology for stable, noise-free SCSI data transfer. *Great Valley Products, 657 Clark Avenue, King of Prussia, PA 19406, (215) 337-8770. Inquiry #201*

## **A2066 EthernetPLUS**

Ameristar Technologies is pleased to announce the release of the A2066 Ethernet card for the Amiga. The A2066 utilizes state-of-the-art technology to bring the Amiga the highest performance Ethernet product available. The A2066 features a high performance host interface increasing CPU access performance by 25% over other Ethernet products, making network applications such as file server operations and X windows run much faster. The A2066 also includes all media interface types so integrating your Amiga into your existing network will be simplified. It provides a boot ROM socket as a standard configuration, but may be utilized for support of network boot capability from third-party applications. The

board includes documentation, a board test program, along with a SANA II software driver. *Ameristar Technologies Inc., 47 Whittier Ave., Medford, NY 11763, (516) 698-0834. Inquiry #202*

## **ANIM Workshop 2**

ANIM Workshop 2 provides you with a set of tools for creating, playing, processing, editing, and adding sound to your Amiga animations. You can "Create" an animation from a list of files or "Separate" an animation into individual pictures. You can delete frames from an animation, add or insert pictures into an animation, use the full-featured ANIM player to view the animation with sound, and more. Supports all Amiga 4000 AGA modes, Anim5, Anim7, Anim8, animation create, process, edit, play, sound insertion, and batch processing of images. *Axiom Software, 1668 East Cliff Rd., Burnsville, MN 55337-1300, (612) 894-0596. Inquiry #203*

## **AutoPaint**

AutoPaint (\$149) has 25 point-and-click screen templates that automatically composite your pictures in just a few key strokes using framestores and 24-bit RGBs or IFFs in ToasterPaint. AutoPaint controls ToasterPaint and will shrink and place your pictures accurately in our templates. The multi-screen templates allow you to create builds, screen by screen. Templates were designed to allow plenty of room for you to add text. Features include: 25 auto layout templates, simple point-and-click interface, adjustable auto beveling, adjustable drop shadows, flash

directory technology, auto multi-file rendering, and a Toaster utility accessory. *A+ Development, 7970 S. Madison Ave., Burr Ridge, IL 60521, (708) 654-0321. Inquiry #204*

## **The Brownstone House**

The Brownstone House (\$49.99) is a collection of 3-D objects in Imagine 2.0 format. Consisting of a recently renovated three-story brownstone complete with plaster walls, two fireplaces, a bay window, full moldings, and decorative archways. Over 100 objects in all, fully colored and textured. Includes furniture, appliances, cabinets, rugs, countertops, fixtures, and more. *ArtScope Industries, 353 17th St., BKLYN, NY 11215, (718) 965-3492. Inquiry #205*

## **Digital BroadCaster 16**

Based on full-motion DCT technology, using the LSI Logic chipset, the Digital BroadCaster 16 system (\$2,495) works in full-screen, real-time NTSC, PAL, and S-Video broadcast-quality resolutions. The digital video compression board digitizes the video signal, from any standard NTSC, PAL, and S-Video format video device, and then compresses the digital frames to the hard drive in real-time. Video compression ratios are user selectable, from between 10:1 and 100:1. Editing is done on an NTSC, PAL, or 15KHz capable RGB monitor. The final edited production is decompressed, and either encoded back to a composite signal and recorded to any standard NTSC, PAL, and S-Video format video device or output as an RS-170 RGB signal. *Digital Micronics, Inc., 2075 Corte Del Nogal, Unit N, Carlsbad, CA 92009. Inquiry #206*

## **Digital BroadCaster 32**

Based on full-motion DCT technology, using the LSI Logic chipset, the Digital BroadCaster 32 system (\$2,495) works in full-screen, real-time NTSC, PAL, and S-Video broadcast-quality resolutions. The digital video compression board digitizes the video signal, from any standard NTSC, PAL, and S-Video format video device, and then compresses the digital frames to the hard drive in real-time. Video

compression ratios are user selectable, from between 4:1 and 100:1. Editing is done on an NTSC, PAL, or 15KHz capable RGB monitor. The final edited production is decompressed, and either encoded back to a composite signal and recorded to any standard NTSC, PAL, and S-Video format video device or output as an RS-170 RGB signal or component video. *Digital Micronics, Inc., 2075 Corte Del Nogal, Unit N, Carlsbad, CA 92009. Inquiry #207*

## **EGS-28/24 Spectrum**

The EGS-28/24 Spectrum is a high-performance, hi-res, 24-bit graphics board that will take any Amiga 2000, 3000, or 4000 beyond AGA! The EGS-28/24 is capable of displaying video resolutions (NTSC, PAL, or SECAM) as well as workstation-like high resolutions such as Next<sup>1</sup> (1120x832). It also adapts automatically to either a Zorro II or Zorro III bus and supports Workbench 2.04, 2.1, and 3.0 to take maximum advantage of its environment. *Great Valley Products, 600 Clark Avenue, King of Prussia, PA 19406, (215) 337-8770. Inquiry #208*

## **Echo EE100**

The Echo EE100 package (\$199) consists of an intelligent cable that connects to any Amiga's serial port and has two cable outputs: one for infrared sent/receive and one for bi-directional control of any video equipment that features the LANC minijack connector. The EE100 also comes with two EX modules and the infrared Trainer software, for easy and total control of peripherals. With the IR Trainer you can "teach" the software to accept the commands from the VCR.

The Echo system is full integrated into the Scala MM and InfoChannel products. *Scala Inc., 12110 Sunset Hills Rd., Suite 100, Reston, VA 22090, (703) 8043. Inquiry #209*

## **FASTLANE Z3 SCSI-II DMA Controller**

This expansion device features a Fast SCSI-II controller with 32-bit DMA as well as 32-bit wide memory expansion up to 64MB on one full-length Zorro-3 slot card.



# NEW PRODUCTS

*and other neat stuff*

The SCSI controller offers transfer rates of up to 7MB/sec (asynchronous) and 20MB/sec (synchronous) on the SCSI bus; the transfer from and to the memory can reach maximum speeds of over 20MB/sec through the FASTLANE's 32-bit wide bi-directional FIFO memories. The 32-bit Wide memory expansion can be upgraded with standard 1M\*8 or 4M\* SIMMs to allow up to 64MB. The individual four memory bands can be populated with 4- or 16MB each, in mixed configurations, thus allowing memory upgrade in steps of 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 48, 52, and 64MB. On request, with the use of 16MB SIMMs, memory may be expanded up to 256MB on the FASTLANE Z3. *Advanced Systems & Software, International Group, 1329 Skiles St., Dallas, TX 75204, (214) 239-2000. Inquiry #210*

## G-Force030 Combo

The G-Force 030 Combo accelerator installs in the CPU slot of an Amiga 2000 and provides workstation processing power, multi-megabyte RAM expansion, and a high-performance SCSI-II interface. *Great Valley Products, 657 Clark Avenue, King of Prussia, PA 19406, (215) 337-8770. Inquiry #211*

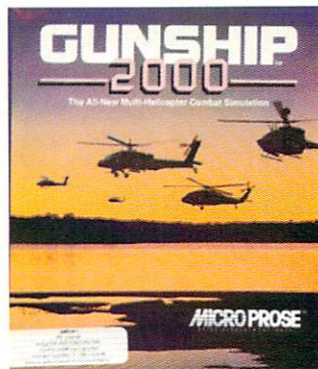
## G-Force040/33

Based on the motorola 68040 processor, the G-Force040 represents the highest performance accelerator available for the Amiga platform. It installs in the CPU slot of an Amiga 2000 and provides lightning-fast processing power, multi-megabyte RAM expansion capabilities, onboard high-performance SCSI-II interface, high-speed serial port, and parallel port. *Great Valley Products, 657 Clark*

*Avenue, King of Prussia, PA 19406, (215) 337-8770. Inquiry #212*

## Gunship 2000

In the tradition of Gunship, the award-winning simulation of the AH-64A Apache, Gunship 2000 gives you total command of a full multi-copter troop of America's most powerful and versatile rotor craft. You'll take charge of five copters on hundreds of combat missions in the Persian Gulf and Central Europe. *MicroProse Software, Inc., 180 Lakefront Drive, Hunt Valley, MD 21030, (800) 876-1151. Inquiry #213*



## Harlequin Plus

The new Harlequin Plus 32-bit framebuffer retains compatibility with the broad range of software which already supports its parent, while adding and enhancing many features. New features include: a genlock fitted as standard for easy synchronizing with an external studio reference; new 24, 15, and 8-bit color modes with optional palette mapping, a 4-bit overlay independent of the main display; new horizontal screen resolutions; field interrupts; and more. *Xi Electronics Ltd., 9 Grey Craigs, Cairneyhill, Fife KY12 8XL, Scotland, (011) 44-383-881768. Inquiry #214*

## I-Card™

Interworks demonstrated the first PCMCIA Ethernet Adapter compatible with the Amiga 600 and 1200 computers. The I-Card package (\$299) includes a high-speed, 16-bit Ethernet adapter plus a SANA II compatible driver, allowing the A600 and A1200 to easily tie in to the ENLAN-DFS Peer-

to-Peer networking software. The I-Card package also offers full compatibility with other Amiga Ethernet-based networking programs that follow Commodore's SANA II networking standard. *Interworks, 43191 Camino Casillas, Suite B2469, Temecula, CA 92592-3714, (909) 699-8120. Inquiry #215*

## InterChange Plus Version 3.0

InterChange Plus 3.0 (4199.95) reads and writes formats such as Autodesk 3D Studio, AutoCAD DXF, Wavefront ".obj," Video Toaster LightWave, Impulse Imagine, Byte by Byte Sculpt, Vista Digital Elevation Maps, and many others. Surface attributes such as color, reflected color, specular, and refraction are translated with the utmost fidelity, making it easy to share models between 3-D programs. InterChange translates all sub-object placement, hierarchy, and rotational information. InterChange Plus also includes the InterFont Converter and 75 pre-made InterFonts, outline-based fonts that become 3-D text objects. *Syndesis Corporation, P.O. Box 65, 235 South Main St., Jefferson, WI 53549, (414) 674-5200. Inquiry #216*

## KeyBang

KeyBang produces a multimedia show in response to the input of a child which entertains the child and heightens his interest. At the same time, KeyBang provides a shield between the child and important computer data so that the child's activity has no ill consequences. Version 2 of KeyBang produces a multimedia show of polygons, images, and sounds. The selection of images and sounds provided can be augmented by images produced by any paint program or sound editor. Additionally, KeyBang comes with special multimedia modules which program its normally random responses making them more constructive and instructive. *KeyBang Software, 11417 July Drive, Suite 304, Silver Spring, MD 20904, (800) KEYBANG. Inquiry #217*

## Magic Lantern

Magic Lantern (\$95) is a program designed to create, edit, and display delta-compressed animations. It takes as input IFF picture and sound files created from other sources and creates animations that run on various frame buffers in up to 24-bit color. Magic Lantern Version 1.0 supports the Retina, the GDA card, and the Amiga custom chips, including all AGA modes. Magic Lantern plays sound effects through the Amiga sound chip. *Terra Nova Development, PO Box 2202, Ventura, CA 93002-2202, (805) 652-0531. Inquiry #218*



## MovieMaker

MovieMaker (\$895) is a highly sophisticated yet easy-to-use digital non-linear hard disk audio/video editing system for animators. MovieMaker is rich in the features necessary to create stunning, full-screen, full-motion animations with 16-bit, CD-quality audio soundtracks. MovieMaker is a complete package and includes timeline-based animation editor/player, Perisound 16-bit audio capture/playback card, AES audio editing software and MMUtlis system utility software. *Interactive Video Systems, 14804 Beach Blvd., La Mirada, CA 90638. Inquiry #219*

## MultiVol

MultiVol splits one big file across two or more disks (diskettes or hard drives), allowing easy exchange of big files with other people or more efficient use of hard disk space. Joining the split file does not require MultiVol (Base version only). Any program can



# NEW PRODUCTS

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use MultiVol without modification. The network version splits or joins the file across disks residing on different networked Amigas. This Base product (\$40) will be available and shipping in December, 1993. The Network version (\$100) will be available and shipping in February, 1994. *AugmenTek*, 3606 S. 180th St. C-22, SeaTac, WA 98188, (206) 246-6077. *Inquiry #220*

## Nick Faldo's Championship Golf

GrandSlam presents the Amiga CD32 version of the critically-acclaimed golf simulation! Features include superlative-filled vector graphics, detailed shading routines using 256 colors, high-speed screen update, training section based on Faldo's videos, realistic club selection and performance, and more. *GrandSlam*, 3 Rathbone Square, 28 Tanfield Rd., Croydon, Surrey, CR0 1AL. *Inquiry #221*

## PageStream 3.0

PageStream 3 (\$395) can be used to write letters, produce high-end color separations, and publish complex books with multiple sections and chapters. New features include trapping and plate control, dual paragraph and character style system, a more flexible toolbox, auto kerning and hyphenation, supports PANTONE® Color System, spot and process color, translates Profession Page documents, and more. The PageStream 3.0 publishing system comes with the PageLiner 2.0 text editor and the BME 2.0 bitmap editor. These programs are linked to PageStream with the included HotLinks 2.0. Customers who purchase a full copy of PageStream 2.2 after March 15, 1993, are eligible for a free upgrade to version 3.0 by

mailing their registration card, proof of purchase, and \$5 for shipping and handling, to Soft-Logik. *Soft-Logik Publishing Corporation*, 11131 S. Towne Sq. Ste. F, St. Louis, MO 63123, (800) 829-8608. *Inquiry #222*

## Photon-Accelerator

Photon-Accelerator gives the user: a 3-D character generator with predefined and user-definable character motions; non-linear timeline-based scene editor; actor-oriented animation, allowing loading and saving of a full hierarchy of objects and their motions, morphs, and 'bones' as a single entity; use variables as objects to create unlimited hierarchy recursions; and more. *Interworks*, 43191 Camino Casillas, Suite B2469, Temecula, CA 92592-3714, (909) 699-8120. *Inquiry #223*

## RiffGrabber

RiffGrabber (\$49.95) captures your live MIDI performance, transcribes it, and zaps it over to Deluxe Music 2.0. Play a composition or improvise a solo; RiffGrabber will notate your performance and send it automatically to Deluxe music 2.0 via AREXX. (No AREXX programming required.) RiffGrabber can also save to a SMUS file for use in the original DMCS. RiffGrabber is optimized for proper transcription, and will recognize triplets, quintuplets, sextuplets, and even septuplets! RiffGrabber transcribes your performance quickly and accurately and can be customized to suit your music style. *Didkovsky/Nerveware*, 118 East 93rd St., Apt 9C, New York City, NY 10128, (212) 369-1733. *Inquiry #224*

## Scala CD32 Development System

Scala proudly introduces the Scala CD32 Development System, a special version of Scala MultiMedia MM300 for use on the new Amiga CD32 multimedia and games machine. The Scala CD32 Development System facilitates full multimedia authoring, including text, pictures, graphics, and animations. It includes a special Player license that allows you to play back your Scala multimedia presentations on CD32. The

authoring is typically done on an A4000 with a CD Recorder connected to the SCSI port. *Scala Inc.*, 12110 Sunset Hills Rd., Suite 100, Reston, VA 22090, (703) 8043. *Inquiry #225*

## Studio 16 Version 3.0

SunRize Industries premieres version 3.0 of its Studio 16 digital audio hard disk recording and editing software. The most significant new feature is the highly intuitive timeline-based cue list which makes audio production as simple as point-and-click. Other major new features include: automatic fades and cross fades, automated mixing, external MIDI mixer support, SMPTE chase, assignable tracks, and multiple digital audiocard support. *SunRize Industries*, 2959 S. Winchester Blvd., Suite 204, Campbell, CA 95008, (408) 374-4962. *Inquiry #226*

## Syndesis 3D-ROM

Syndesis Corporation announces the release of the Syndesis 3D-ROM (\$199.95), a CDROM containing more than 600 3-D models. All models are present in five formats: Autodesk AutoCAD DXF and 3D Studio, Wavefront ".obj," NewTek Video Toaster LightWave, and Impulse Imagine for MS-DOS and Amiga. The disc also contains more than 400 texture maps for coloring 3-D models. These images can be tiled side-by-side without seams. *Syndesis Corporation*, P.O. Box 65, 235 South Main St., Jefferson, WI 53549, (414) 674-5200. *Inquiry #227*

## TBSPlus

The TBSPlus is an internal broadcast-quality processing card for the Amiga. The TBSPlus operates as an infinite window time-base corrector using 8-bit 4:2:2 professional-quality, all-digital video signal processing. It provides a real-time video framegrabber and 16.7 million color framebuffer with professional image processing and paint software. The TBSPlus includes a full SMPTE/EBU time-code receiver/generator operating in all VITC/LTC formats and standard. It transcodes composite and Y/C inputs into simultaneous composite and Y/C outputs and

includes full video processing amp controls. A three-channel video input switcher in composite Y/C and a programmable video special-effects generator for solarization, pseudo color, strobe, freeze, etc. are also included. The TBSPlus is a normal Zorro II Amiga card that can be installed in any open Zorro slot of the Amiga 2000/3000(T)/4000(T). *Great Valley Products*, 600 Clark Avenue, King of Prussia, PA 19406, (215) 337-8770. *Inquiry #228*

## Toaster Cozzy 4000

Heifner Communications has re-engineered their Toaster Cozzy to be compatible with the new Video Toaster 4000 and Amiga 4000. It prevents the toasterboard from possibly shorting out the motherboard due to contact. The built-in power supply prevents overheating/blown power supplies in the Amiga 4000. Enables potential use of all Zorro expansion slots while still using the Video Toaster. *Heifner Communications Inc.*, 4451 I-70 Dr. NW, Columbia, MO 65202, (800) 445-6164. *Inquiry #229*

## Toaster-Net

Interworks announced the first professional distributive renderfarm software for the Amiga and NewTek's Video Toaster's LightWave. Toaster-Net will give you the control to render a sequence of LightWave scenes, render selective frames from LightWave scenes, efficiently 'delegate' renderings across a network for optimum speed, automate moving complete scenes between systems, and more! *Interworks*, 43191 Camino Casillas, Suite B2469, Temecula, CA 92592-3714, (909) 699-8120. *Inquiry #230*

## TVPaint 2.0 Professional

Some of the features of TVPaint 2.0 Professional include a 256-level Alpha Channel, automatic antialiasing on all drawing tools, full support for the new pressure-sensitive tablets, convolutions processing for effects, and more. Using modeless window technology, the majority of control panels can be left open so that you can better manipulate your work. TVPaint also directly support



# Picasso II

## Retargetable Graphics\* have arrived! 24 bit graphics for your Amiga®

### Picasso II RTG (Retargetable Graphics) means Incredible New Graphics Power for your Amiga.

Providing greater resolutions and more speed than AGA systems and the ability to run system friendly AGA software, the Picasso II is a next generation graphics display system. Your Amiga will be able to run all the latest software at resolutions up to 1280 x 1024 with 256 colors on screen. The Picasso II also supports custom screen modes with up to 16.7 million colors at resolutions as high as 800x600.

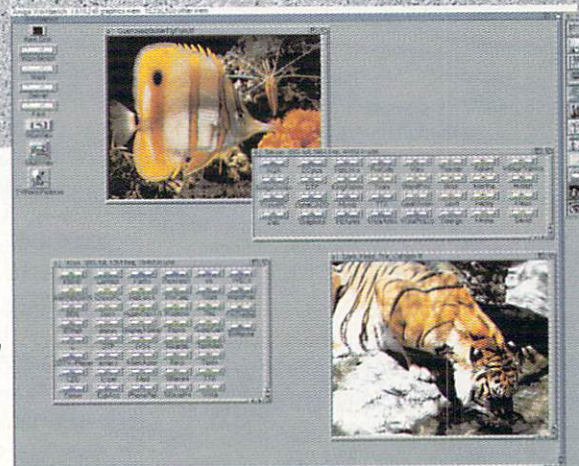
### Picasso II RTG means No Waiting for Specially Programmed Versions of Your Favorite Software.

The Picasso II RTG emulator is completely integrated into the system. Imagine being able to run the latest software packages like ProPage 4.1, PageStream 2.2, Cygnus Ed 3.5, Deluxe Music Construction Set 2.0, AmigaVision Professional and many others at resolutions up to 1280x1024 and up to 256 colors. All system friendly Amiga software packages will be able to take advantage of the new screen modes offered by the Picasso II.

### Picasso II RTG means Hi-Performance.

The Picasso II has an on-board Blitter which supports drawing speeds up to 30 megabytes per second. The Picasso II Blitter has been fully integrated into the RTG emulator. Any program running under the RTG emulator will automatically take advantage of the Blitter. Off screen displays are moved into Picasso II display memory using the Blitter for super fast screen updates.

1280 x 1024  
256 color  
Workbench screen  
displayed on an  
A3000 with the  
Picasso II.



### Picasso II RTG means No More 'Chip Ram Blues'

The Picasso II RTG emulator has been designed so that it uses no chip ram for its emulation. Only the currently visible display is kept in the Picasso II display memory, all other screens are stored in standard system memory. This means that all system memory can be used as graphics memory. A system equipped with 16 megabytes of ram would be like having a 16 megabyte graphics board!

### Picasso II RTG means Maximum Compatibility.

The Picasso II RTG emulator supports Workbench 2.04, 2.1, 3.0, and beyond. The Picasso II is compatible with any Zorro II or Zorro III equipped Amiga system, such as the A2000, A3000, or A4000.

### Picasso II AutoSwitch means One Monitor.

The Picasso II comes with a built in electronic switch that automatically routes the proper signal to your monitor. When the AutoSwitch detects non-Picasso II screens, such as those used by games and older software, it automatically routes the signal directly to your monitor. When the AutoSwitch senses a Picasso II screen mode, it will automatically switch back.

The Picasso II comes packaged with TVPaint Jr. (24 Bit Paint Program), and drivers for ArtDept Professional, ImageFx, ImageMaster, and Real 3D 2.0.

\***Re-tar-get-ab-le Gra-phics adj.:** The ability to run software on any third party graphics board. See also: Picasso II.

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Circle 116 on Reader Service card.



# NEW PRODUCTS

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video digitizing with the VLab and the IV-24 from GVP so that you can digitize directly into your paint package. MacroSystemsUS, 17019 Smugglers Cove, Mt. Clemens, MI 48038, (313) 263-0095. Inquiry #231

## TypeSmith 2.0

TypeSmith 2.0 (\$199.95) can load, save, edit, and generate bitmap screen fonts. Users can create bitmap fonts manually or choose Generate Bitmap to automatically create a bitmap version of an existing outline font. TypeSmith 2.0 offers the ability to trace a picture automatically. Just load a picture and choose the Autotrace command. Customers who purchase a full copy of TypeSmith 1.0 after August 15, 1993, are eligible for a free upgrade to version 2.0 by mailing their registration card, proof of purchase, and \$5 for shipping and handling, to Soft-Logik. Soft-Logik Publishing Corporation, 11131 S. Towne Sq. Ste. F, St. Louis, MO 63123, (800) 829-8608. Inquiry #232

## VE500

The Scala VE500 package consists of both hardware and software. Scala has developed an RS-422 card for the Amiga Zorro bus with four RS-422 ports and two GPI triggers. Up to two such cards can be used in one machine, giving up to eight RS-422 ports and four GPI triggers. The Scala VE500 works in the same machine being used for Toaster, OpalVision or Amiga graphics applications—at the same time! Scala Inc., 12110 Sunset Hills Rd., Suite 100, Reston, VA 22090, (703) 8043. Inquiry #233

## Video Toaster EX

The Scala Toaster EX gives you full control of the Video Toaster

directly from a Scala presentation. Use the Toaster EX together with other Scala EX modules to control any number of VCRs, laserdiscs, MIDI, sound, Amiga titles, and animations. The Toaster EX can be configured in two different ways; internal or external control. Run it internally on the same Amiga as the Video Toaster to setup a sequence of Toaster events. The external option allows control of a Toaster machine from another Amiga. Scala Inc., 12110 Sunset Hills Rd., Suite 100, Reston, VA 22090, (703) 8043. Inquiry #234

## VideoStage Pro™

Spectacular video and on-screen interactive productions are easily created with VideoStage Pro. Shows can incorporate text, graphic objects, video clips, and sound. Remote control via modem or network and built-in AReXX interface enable VideoStage Pro to develop applications in training, kiosk-style information center, video catalogs. Compatible with AmigaDOS 3.0 and AGA chip set. Oxxi Inc., PO Box 90309, Long Beach, CA 90809, (310) 427-1227. Inquiry #235

## Vivid 24

The Vivid 24 is a super high resolution graphics rendering engine designed for the Amiga A3000 series of computers. Capable of calculating and rendering 100,000 Gouraud-shaded polygons per second, DMI's newest graphics controller can display up to 2048 x 2048. Digital Micronics, Inc., 2075 Corte Del Nogal, Unit N, Carlsbad, CA 92009. Inquiry #236

## WARP System

The WARP System (available early 1994) is a highly flexible transputer-based, multi-purpose Peripheral Processing system. The system is a full-blown RISC-based accelerator with unrestricted expansion options in terms of power and user memory space.

The WARP System consists of a 'baseboard', which contains a single processor and slots for two additional processors. The WARP Board uses advanced parallel processing with Superscalar

transputer processors at speeds of 30 MIPs to several GigaFLOPS. The transputer is a 32-bit processor with an on-board 64-bit floating point unit that operates in parallel with the main processor. Each transputer chip has four serial links that allow it to communicate at speeds of 2MB per second with other transputers when linked in a network. Interfacing is performed through the "WARPBoard" library and all programming on the board is done in C. Prices starting below \$1,000. For more information contact Ron Henry. U.S. Cybernetics, Inc., 1950 Stemmons Freeway, Suite 5001, Dallas, TX 75207. (214) 746-5844. Inquiry #237

## WaveMaker

WaveMaker allows for the easy creation of incredible LightWave 3D animations with little or no 3-D experience. It's even possible to render single frames or entire animations directly from WaveMaker. You can also batch render animations using WaveMaker's Animation Sequence feature. Axiom Software, 1668 East Cliff Rd., Burnsville, MN 55337-1300, (612) 894-0596. Inquiry #238

## •Books•

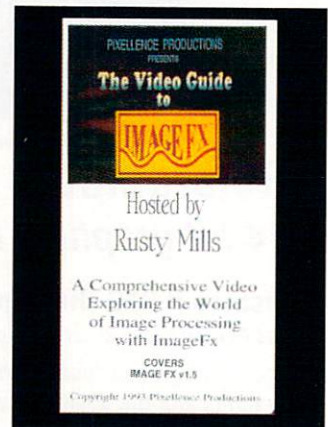
### Free Ethernet Tutorial

Lantronix is offering a free Ethernet Tutorial and Product Guide while supplies last. The 28-page publication includes an introduction to Ethernet connectivity products, applications diagrams, a 7-page tutorial on the different types of Ethernet networks, and a glossary of 150 common terms. Lantronix' products are described and prices are provided. A business reply card included offers readers a free subscription to future editions of the tutorial. Lantronix, 15353 Barranca Parkway, Irvine, CA 92718-2216, (714) 453-3990. Inquiry #239

### Mastering AmigaDOS 3 - Reference

This book covers over 140 AmigaDOS commands in 416 information-packed pages. The A to Z for-

mat, command summary, and comprehensive index make this the perfect companion for the AmigaDOS user, expert, or beginner. Each command appears with its synopsis and templates, and where appropriate, cross-referencing with other commands. Bruce Smith Books Limited, Smug Oak Centre, Lye Lane, Bricket Wood, Herts, AL2 3UG, (011) 44-923-894355. Inquiry #240



## •Other Neat Stuff•

### Animation 202: Fractal Freedom

The tape (\$35) begins with a 10 minute action-packed movie, Oklahoma Ken. The other 50 minutes are illustrated tips and instruction about how the movie was made. All animations were created on a basic Amiga 3000 and recorded in realtime. The only extra hardware used was a Super Gen genlock and a Chroma Key Plus. Myriad Visual Adventures, 1219 N.W. 79th St., Oklahoma City, OK 73114, (405) 842-0818. Inquiry #241

### Blue Ribbon News

The Blue Ribbon SoundWorks announces the release of the Performance Tools Kit and the Power Tools Kit, add-ons for Bars&Pipes Professional v2.0. The Performance Toolkit is designed to serve the needs of the performing musician. It includes musical modules, called Tools, which enable the B&P Pro



# STRETCH



## YOUR TOASTER PRODUCTIVITY

WITH THESE EXCITING NEW RELEASES FROM INTERWORKS

### **Photon Accelerator™**

Designed for both novice and professional Lightwave™ users, **Photon Accelerator** provides the most powerful set of tools available to help create complex animations with an easy-to-use graphic interface similar in look and feel to Lightwave's™ own. A **3D Character Generator** goes beyond simple flying text, allowing complex text animation with a familiar CG interface. **Actor-oriented** animation allows grouping of objects, bones, & morph targets and application of complex motions. Other features include a non-linear timeline scene editor and **Follow-Me-Motion™**.

### **ENLAN-DFS™ 2.0**

ENLAN-DFS™, the most popular peer-to-peer Ethernet-based networking software for the Commodore Amiga, is now more powerful than ever! **Version 2.0** now boasts features such as **automatic reconnection** of nodes which have been off-line and come back on the network. Other features include direct **AREXX** and **SuperBase Professional 1.3** support, as well as **SANA II** compliance, which allows for multiple networks to share a single Ethernet card, and **MORE!**



### **INTERWORKS**

### **TOASTER-NET™**

The **first and only** professional Render-Farm software commercially available for the Toaster's Lightwave 3D™! **TOASTER-NET's™ distributive rendering** capabilities brings tremendous power to all Lightwave™ animators by providing features such as rendering a **list** of Lightwave™ scenes either across a network or on a single Amiga, rendering selected frames, and "moving" a scene from one Toaster to another via a convient filing utility.

### **I-Card™**

The first high-speed, 16-bit PCMCIA Ethernet Adapter for the Commodore Amiga A600 & A1200 computers. With its on-board 64K byte buffer and its compliance with Commodore's SANA II networking standard, the I-Card's™ performance is comparable to bus-based Ethernet LAN adapters for the A2000, A3000, & A4000 series computers.

## 1-800-3-I WORKS

All product names are trademarks of their respective companies.

*Photon Accelerator & TOASTER-NET have been designed by the professional animation staff at the studios of:*





# NEW PRODUCTS

*and other neat stuff*

user to enhance his or her performance. The Power Tools Kit was created to provide B&P users with the most powerful MIDI Tools available to the Amiga market. Part of the B&P Add-on Series, the Performance Tools Kit and the Power Tools Kit each carry a manufacturer's suggested retail price of \$69.95. The Bars&Pipes Add-on Series is a collection of nine packages designed to enhance and improve the capabilities of Bars&Pipes Professional. *The Blue Ribbon SoundWorks Ltd., Venture Center, 1605 Chantilly, Suite 200, Atlanta, GA 30324, (404) 315-0212. Inquiry #242*

## dataTAX for Canadians Available

Legendary Design Technologies is proud to announce an agreement with DataMax Research of Bradford, Ontario, to continue to publish the dataTax program for the Canadian Amiga market. All users that registered the product with DataMax will be receiving update information shortly; those who haven't can call or write Legendary for details. The product will retail for \$59.95 Canadian to first-time buyers, and updates will be available for \$29.95 Canadian as in previous years. *Legendary Design Technologies Inc., 25 Frontenac Ave., Brantford, Ontario, CANADA N3R 3B7, (519) 753-6120. Inquiry #243*

## FARGO Printer Driver

FARGO Electronics announced the immediate availability of an Amiga printer driver for its Primere Color Printer. The printer driver is being made available at no extra charge. It can be obtained on 3.5" diskettes from FARGO's technical support department at (612) 941-0050. In

addition, the driver and any subsequent versions will be posted for downloading on the company's CompuServe BBS. The driver is compatible with all Amigas running Version 1.3 (or higher) operating system. A minimum of 2MB of RAM is required; 4MB is recommended. *FARGO Electronics, Incorporated, 7901 Flying Cloud Dr., Eden Prairie, MN 55344, (612) 941-0050. Inquiry #244*

## Free Update for Golden Gate

The software update 1.28.25 for the vortex Golden Gate 386SX and Golden Gate 486SLC PC/AT emulators is now available. The Golden Gate products run as a task in the Amiga environment. This task can now be given a priority, thus conferring more or less speed to Golden Gate. The emulation of the keyboard has been improved—every user can assign special keys to an individual keycode. Support for the Amiga RS232 has been improved upon also. The update is available free of charge directly from GMR productions/vortex by sending in two blank Amiga disks and a SASE or send in a \$10 check and the new update master disks will be forwarded to you. *GMR Productions, 3835 Richmond Ave., Suite 138, Staten Island, NY 10312, (718) 967-1509. Inquiry #245*

## GMR Productions

GMR Productions announces price reductions on the vortex Golden Gate 486SLC product line and a special pricing bundle for a complete 486SLC system. The new prices for the 486SLC 2MB board is \$799 and the 8MB board is \$1149. A special complete system bundle is being offered for a limited time on the Golden Gate 486SLC with the WinStorm board (SVGA, sound, game port, and SCSI CD-ROM controller) for \$1049. (GMR Productions has taken over sales and distribution of all Vortex products for the U.S., Canada, and South America. All Vortex products are now shipped in the U.S.) *GMR Productions, 3835 Richmond Ave., Suite 138, Staten Island, NY 10312, (718) 967-1509. Inquiry #246*

## New Features for MM300

Scala MultiMedia MM300 (\$399) is packed with new functions. New features include: drawing tools, resizing of brushes and pictures, fast Floyd-Steinberg dithering, optimize palette, absolute timing, file requester shuffler, new wipes, sound on buttons, improved antialiasing, new backgrounds, text box for subtitling, new EX modules, and more. *Scala Inc., 12110 Sunset Hills Rd., Suite 100, Reston, VA 22090, (703) 8043. Inquiry #247*

## Northwest Amiga Group Calendar

The Northwest Amiga Group has published a calendar for 1994. It is available for \$5 by mail. *Desktop Publishing SIG, Northwest Amiga Group, Suite 553, The Galleria, 921 S.W. Morrison St., Portland, OR 97205. Inquiry #248*

## Qwika Switcha™

The ultimate four-socketed ROM selector for your Amiga 500 or 2000. Comes complete with 3.5-inch ribbon cable and four sockets for the most compatibility available. Newly redesigned, it fits within the palm of your hand while providing space for you to select from 1.3 to 2.x with room for two more future ROMs when they become available! Simple plug-in installation. *Better Concepts, Inc., 22 N. Main St. Ste. #393, New City, NY 10956, (914) 639-5095. Inquiry #249*

## Pride Music Library Catlog System

With Pride's Music Library Catalog software, you can now audition the tracks of your music libraries in small sound bites—directly from your Amiga. You will be able to narrow your selections by listening to music rather than reading through page after page of printed catalogs. In cooperation with several of the most popular music library companies, Pride is producing a computer-based audio catalog of each library's entire product line. A 15 to 20 second digitized sample of each main tracking a library is paired with database information,

allowing you to search and then listen for the music you need. The easy-to-use search functions allow you to locate music based on title, category, descriptions, or instruments. *Pride Integrated Video Systems, 2715 Australian Ave., West Palm Beach, FL 33407, (800) 678-3942. Inquiry #250*

## The Video Guide To ImageFX

A two-volume video set that takes you on a complete tour of GVP's ImageFX. Unique color-coded chapters allow for easy locating of desired subjects. Rusty Mills, an animation director of Warner Bros., guides you through every menu and gadget to give you a thorough understanding of this powerful program. Included as a bonus is a guide through CineMorph. *RADICALifornia, 10100 McVine Ave., Sunland, CA 91040-3359, (818) 951-3730. Inquiry #251*

*New Products and Other Neat Stuff is compiled by Elizabeth Harris.*

## How to get your products listed in New Products and Other Neat Stuff

*Send a descriptive press release and two copies of the hardware or software. Please include product name, company name, full address, and telephone number. Our mailing address is PiM Publications, Attn: New Products Editor, P.O. Box 2140, Fall River, MA 02722-2140. For UPS and Federal Express, our address is PiM Publications, Attn: New Products Editor, 1 Currant Place, Currant Rd., Fall River Industrial Park, Fall River, MA 02720-7160.*



# REVIEWS

## TV Paint Professional 2.0

by Douglas J. Nakakihara

TV Paint Professional version 2.0, when teamed up with the 24-bit Retina display card, both distributed by MacroSystemUS, brings affordable 24-bit painting capability to the Amiga. TV Paint also supports other graphics cards like A Video, DMI Resolver, Harlequin, Impact Vision 24, Rambrandt, Visiona, and VD2001.

### Requirements

TV Paint requires at least a 68020 processor with math coprocessor, a minimum of 8MB of RAM, and OS2.0 or greater. Working with ultra high-resolution images and utilizing the spare screen, undo, large brushes, and masks can push RAM requirements even higher. TV paint does include a feature that allows you to work on an im-

age larger than your display and hold portions of the image on disk. This is not a scrolling virtual screen; the image is broken up into editable sections. You can use a Wacom, Summa, or Kurta touch tablet with TV Paint, which supports pressure sensitivity.

### Beyond HAM and AGA

Using a true 24-bit display is markedly superior to using HAM8. On a HAM8 display, each pixel's color is dependent on another pixel's color, unless the color is among the 64 base colors. Therefore, fringing, although minimized, is still present in HAM8. Compare this to the Retina display where each pixel can be any color from a palette of 16.7 million colors!





## The Palette

You can change each of the four available 256-color palettes to include any combination of the 16.7 million possible colors. Palettes can also be saved and loaded as files for unlimited variations. Colors can be defined using RGB, CMY, or HSL controls, as well as selected from two full-color spectrums. Copying, exchanging, and spreading functions are provided. The mixer feature allows you to mix colors together, like a painter, to get just the right color. It even features a dilution option! Note that colors used in the image don't change when you modify the palette.

## Features

The manual is essentially a giant tutorial. There are exercises that take you through essentially every feature of TV Paint. Of course, TV Paint has all of the basic painting tools you're used to, including freehand, line, rectangle, circle, and

ellipse drawing. Text input (bitmapped only), brush cut and paste, color fills, and airbrush are also there. Many of the tools and keyboard equivalents operate in a familiar *DPaint*-like manner. However, in contrast to *DPaint*'s tools-on-the-border approach, TV Paint's tool icons are all located on a floating window.

Automatic anti-aliasing, which reduces jaggies, is on by default for most drawing functions. TV Paint also features spline drawing functions, similar to those used in structured drawing programs. However, once placed, lines are not editable using splines. Several drawing modes are included like color, stamp, smooth, blur, shift, and smear. More interesting modes include trans, which lets you rub-through an image revealing the spare image, colorize, dithering, and grain.

The airbrush requester includes the ability to change not only the size of the brush, but also the power of the airbrush

around its center. Set your own "power curves" or use one of the pre-defined ones. There is even a test area on the requester to see what the selected airbrush will do. Besides airbrush, TV Paint also features brush tools to emulate chalk and a pencil. A pressure-sensitive tablet would greatly enhance the use of these tools. Even without a pressure sensitive tablet, you can draw lines with varying color density by setting the beginning and ending density percentage before you draw a line.

Brushes can be wrapped around any of the filled shapes. You can also change the perspective of the brush in three-dimensional space. A magnifying option is implemented in the form of a floating window. Positioning and magnification icons are conveniently set right in the border.

Extensive color masking (aka stencil) is featured, which lets you protect areas of an image based on colors. TV Paint includes a cool feature that shows the mask as a





black-and-white image. A smoothing function can smooth the outline of a mask.

The Look Up Table feature allows you to globally change an image's color to lighten or darken an image, make it negative, etc. The Convolution filter lets you accomplish effects like blur, sharpen, relief, and outline.

### Margin Limits

Because you are working with so many colors, certain operations that are based on individual colors become quite cumbersome. For example, Fills normally stop when a different color is reached. If you are working with a complex image, a single color change may be too limiting. To help remedy this, TV Paint uses margin limits. This is sort of a fudge factor that allows colors within a certain RGB range to be treated just like the defined color. This is also available with masking.

### Color Ranges

Solid objects drawn in the Cycle mode will be filled with a range of colors. The operation is very similar to the way DPaint handles it and even uses a direction vector. Color ranges are defined by assigning start and end colors in the color palette, so you cannot randomly pick and choose colors for a range as you can in DPaint. But you could rearrange the colors in a palette to achieve the same result. The Repetition function combined with Cycle allows you to easily create kaleidoscope-like images.

The Density function operates like color ranges, but uses more or less of the current color. Objects drawn in this mode take on a transparent look. Various aspects of the density operation are graphically adjustable using a special requester.

### Alpha Channel

Within TV Paint, normally every 24-bit image can have its own 8-bit Alpha channel. Think of it as an invisible filter sitting on top of an image where every hole in the filter corresponds to a pixel. A black pixel represents the largest hole size in the filter. Holes are proportionally smaller if a pixel is lighter; a pure white pixel has no hole. When an image is merged into another picture, it must first pass through the Alpha channel. Wherever it is black in the Alpha channel, 100 percent of the merged picture comes through; however, white areas remain unchanged, with all of the in-between shades acting accordingly.

TV Paint includes a feature that automatically converts any image into a Alpha channel. Some very interesting effects can be achieved using an Alpha channel like embossed transparent logos and composited images.


TV Paint supports various image formats like ILBM, DEEP, Delta compression, JPEG, TGA, and Rendition. TV Paint can also do real-time framegrabbing if you have a VLab, IV24, or Rambrandt board. Additionally, it fully supports ARexx.

### What's Not To Like


One annoying quirk is that the file requester does not open on the main TV Paint screen. So you have to do some screen flipping to get to it and back to the main screen. The real bummer, however, is the non-pass-through joystick dongle. But this seems to be a depressing trend (*Brilliance*, *Scala MM210*, to name a few). Speaking of the manual, it is fairly well written, though it still includes some unfinished stray notes made by the writer. There are many helpful illustrations and a handy keyboard equivalent list.

# Well Connected

## Amiga Client Software



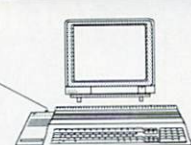
Do you want to share files with your Amigas plus PCs and Macs? Share peripherals such as large storage devices, laser printers and other output devices, faxes, and video equipment? Easily manage large files? Access your computer and files from home or work? Restrict file access or quickly backup large files? Then we have the connection you need.



Amiga Client Software will meet your networking needs and allow any Amiga configured with a LAN card to work with the best selling, most reliable, most extensively supported network available—Novell NetWare®


Large project management productivity can be greatly enhanced—whether a program development effort, VideoToaster® applications, database management, order entry, extensive desk-top projects or any team effort requiring file sharing.

**Requirements:**  
Software: Novell NetWare® Version 2.15 or higher, installed on network file server; Amiga WorkBench Version 1.3 or higher, KickStart 1.2 or higher.



**Hardware:**  
Amiga computer with 512K memory, File Server, LAN ARCNet, or Ethernet communications cards (1 for each workstation, 1 for server), cabling and other connection hardware.

**Now Shipping!**  
Contact Oxxi for further information



**Oxxi inc.**

PO Box 90309, Long Beach, CA 90809 USA  
(310) 427-1227 FAX (310) 427-0971

Circle 160 on Reader Service card.

Minor complaints aside, TV Paint is a solid, easy-to-use, powerful paint program. If you already have a supported graphics card, you should give it a try. If you don't, get a Retina. Believe me when I say, "you ain't seen nothing until you've painted using 16 million colors on a high-resolution screen!" The multiple-graphics-cards version lists for \$499. The Retina-only version is \$449 or \$899 when bundled with a Retina card.

**TV Paint Professional 2.0**  
MacroSystemUS  
17019 Smugglers Cove  
Mt. Clemens, MI 48038  
(313) 263-0095  
Inquiry #252



# GVP's A1200 SCSI/RAM+ & CSA's Twelve Gauge for the Amiga 1200

by Morton A. Kevelson

## CSA

CSA's Twelve Gauge is a multi-function card that fits into the Amiga 1200's 150-pin expansion slot. Twelve Gauge achieves its high functional density by installing surface mounted components on both sides of a multi-layer printed circuit board. The side of the board that faces up after it is installed in the computer is equipped with a single 72-pin SIMM socket that accepts one industry-standard 1, 2, 4, 8, 16 or 32MB, 32-bit, 60 nanosecond or faster, dynamic RAM SIMM operating in burst mode. In view of Twelve Gauge's operating speed, a 60 nanosecond or faster DRAM SIMM is a must. The RAM is mapped into the 68030's 32-bit address space where it does not conflict with the Amiga 1200's 8MB expansion RAM space. The board I tested was equipped with 4MB of 32-bit RAM. The other side of the board, which faces down after it is installed, was equipped with a 68030 microprocessor running at 50MHz. A lower cost configuration, based on the 40MHz 68EC030, is also available. The optional 50MHz 68882 math

coprocessor and autoboot ROM was also installed in the sample I looked at. Last, a SCSI host adapter is also available. The SCSI host adapter includes a short length of flat ribbon cable and a DB25 connector that installs in the Amiga 1200's knock-out port, which is located on the computer's backpanel.

Installation is fairly simple. Just pop out the Amiga 1200's trap door, align the 150-pin connector, and push Twelve Gauge into place. The 25-conductor flat ribbon SCSI cable supplied with Twelve Gauge is split into two strips with the internal connector folded back upon the cable. This clever arrangement lets you install the SCSI without opening the computer thereby preserving Commodore's warranty. A helpful poke from a screwdriver or some other blunt instrument may be needed to urge the cable on its way. Twelve Gauge has to be pried up a bit to finish hooking up the SCSI cable. An on-board ROM automatically handles the configuration of the RAM installed on Twelve Gauge. Twelve Gauge is

equipped with several jumpers that can be used to control autoconfiguration and microprocessor status. Most of the jumpers are used for testing and diagnostics, so should be left alone.

During operation of the system I noticed that the area in the vicinity of the expansion slot under the computer was quiet warm. This was not unexpected as the conglomeration of computational power that was crammed on this board generates a substantial degree of heat.

Although the CSA hardware appeared to be a production version with no jumpers or hand modifications, the manual and setup software that were provided was preliminary. The CSA hard drive setup program was easy to use; however, it did not let you access some of the hard drive's parameters. For example, you could not change the priority of the boot partition. CSA does fully support the use of AmigaDOS 2.0+'s HDToolBox hard drive setup program, which does let you access all of the important parameters.

## GVP

GVP's SCSI/RAM+ is a multifunction expansion card for the Amiga 1200 that includes a high speed SCSI-2 host adapter, an optional 68882 math coprocessor, and a pair of 32-bit SIMM sockets that can accommodate up to 8MB of RAM. Oddly enough, SCSI/RAM+ does not have a real-time clock. The board I tested was equipped with 4MB of 32-bit RAM, a 33MHz 68882 math coprocessor and 4MB of 32-bit Fast RAM. RAM is added to SCSI/RAM+ by simply plugging in GVP's custom 60 nanosecond, 32-bit SIMM modules. The board will

The following performance tests were run with a Quantum LPS525S SCSI hard drive connected to the system:

Using Nic Wilson's SysInfo V3.14.

	CSA Twelve Gauge	GVP SCSI/RAM+
System Speed ref. basic A1200	7.22	2.22
CPU MIPS	9.60	2.95
FPU MFLOPS	1.33	0.65
Chip RAM vs A600 Chip RAM	6.33	3.51
Dhrystones per sec.	9206	2835
SCSI Read Speed Bytes/Sec	881,000	2,203,000



accept either 1MB or 4MB SIMMs but not both types at the same time. The possible RAM expansion options are 1, 2, 4 or 8MB. If you are using a PCMCIA RAM expansion card, then SCSI/RAM+ will be limited to no more than 4MB of 32-bit RAM. The optional math coprocessor can be run at clock speeds as fast as 40MHz.

Installation of the basic SCSI/RAM+ consists of popping out the trap door, aligning the 150-pin socket and pushing the board into place. GVP has thoughtfully provided a semicircular thumb notch on the end of the board opposite the connector. The thumb notch makes it easy to apply the seating force in the right direction, thereby minimizing the stress on the connector.

SCSI/RAM+ is also equipped with an on-board SCSI interface and a 40-pin double header drive connector. The package includes a short length of 40-conductor flat ribbon cable for use with an internally mounted 2.5"-hard drive. The internal hard drive installs in place of the Amiga 1200's IDE drive. Installation of the drive is not difficult; however, you will have to open

## Video Palace

The External Interface for Opal Vision and all Amiga's **\$450.00**

(Opal Vision not included)

### New low prices on hard-drives:

* External SCSI case	3.5" good for SyQuest 3105	\$ 69.95
* Seagate ST3144A	130MB	\$199.95
* Seagate ST3243A	211MB	\$244.95
* Seagate ST3290A	260MB	\$259.95
* Seagate ST3390A	340MB	\$359.95
* Maxtor 7120S	120MB	\$199.95
* Maxtor 7213S	213MB	\$259.95
* Maxtor 7245S	245MB	\$274.95
* SyQuest 44SQ555	\$279.95 44MB cart.	\$79.95
* SyQuest 5510	\$309.95 88MB cart.	\$119.95
* SyQuest SQ3105	3.5" \$459.95 SQ310 cart.	\$84.95

Multi-Sync monitors as low as \$320.00

All prices are subject to change without notice. call for current pricing and other products available.

1-805-925-0970

Opal Vision is a registered trademark of Opal Technologies Inc. Video Palace is a trademark of Videopolis R. & D. Prices do not include shipping and handling. Videopolis 1-805-925-0970

Circle 133 on Reader Service card.

Using LaMonte Koop,s AIBB 6.1 with all results referenced to the basic A1200:

	CSA Twelve Gauge	GVP SCSI/RAM+
EmuTest	5.45	1.97
Writepixel	2.99	1.47
Sieve	4.26	1.20
Dhrystone	5.69	1.81
Sort	5.44	1.44
EllipseTest	1.97	1.36
Matrix	5.36	1.38
IMath	4.28	1.23
MemTest	3.40	2.19
TGTest	1.70	1.24
LineTest	1.10	1.06
Savage	4.92	1.74
FMath	5.30	1.92
FMatrix	4.86	1.69
BeachBall	4.82	1.73
InstTest	6.43	2.03
Flops	4.91	1.74
TranTest	5.01	1.77
FTrace	4.99	1.73
CplxTest	5.34	1.80

the computer, thus voiding Commodore's warranty. If you are hooking up an external SCSI peripheral, you will need to purchase GVP's optional external SCSI Kit. The external SCSI kit includes a longer length of 40-conductor flat ribbon cable and a DB25 connector adapter that installs in the Amiga 1200's knockout port, located on computer's the rear panel. GVP still specifies that the computer should be opened up in order to install the external SCSI cable. Nevertheless, I adapted CSA's cable folding technique to the GVP external SCSI cable and was able to complete the installation without opening the computer.

The SCSI bus termination on SCSI/RAM+ cannot be removed or disconnected. Since the SCSI bus termination on 2.5"-SCSI drives cannot be turned off, SCSI/RAM+ is limited to either a single internal SCSI drive, or an external daisy chain of up to six SCSI peripherals. The bottom line is that you cannot connect an internal SCSI drive and an external SCSI drive to SCSI/RAM+ at the same time.

(continued on page 22)



# CygnusEd Professional Release 3

By Douglas J. Nakahihara

ASDG's *CygnusEd Professional Release 3* (CED) commands a list price of \$119.95, significantly more expensive than its shareware and freeware counterparts, including AmigaDOS's own *ED*. Is it worth it?

## Text Editor vs. Wordprocessor

Although text editors and wordprocessors share many of the same features, wordprocessors are geared for WYSIWYG output, often including graphics, while text editors generally are not. Another important difference is that text editors are line-oriented by design, while wordprocessors are normally paragraph-oriented. Text editors are most often used for editing programs, like C language, ARexx, and AmigaDOS batch files.

## The Editor's Editor

The sheer size of the 240-page manual, gives you an early indication of what to expect from CygnusEd. Of course, all of the basic features are there, like cut-and-paste, wordsearch, etc. However, CED often goes beyond the standard implementation of features. For example, the search function has a history, so you can browse through previously used search parameters. This minimizes the need to retype information that has already been entered once.

Any text editor will allow you to mark certain blocks of text for cut-and-paste operations, normally in a linear fashion. CED's columnar cut-and-paste feature allows you to work with a rectangular area of text. This is handy for removing or extracting a column of information from a file, like the filenames from a directory listing that includes file sizes, creation dates, etc.

CED also uses the Amiga clipboard for various editing operations. I was surprised to learn that the clipboard has 256 separate buffers, which CED supports; however, most programs—even if they support the clipboard—use one only buffer.

## Wordwrap

CED also features wordwrap, something missing in many text editors. However, if you edit an existing line in a paragraph, you must manually execute the reformat command to reformat the paragraph. This can be left or fully justified. Note that this is much different from a wordprocessor that reformats paragraphs on the fly. A line of text can also be quickly centered based on the left and right margins.

Wordwrap is great for creating program documentation that will be either viewed using a textviewer or dumped straight to a printer. In these cases, you normally want a line to be fewer than 80 characters long. If lines exceed this, the output may not be what you expect.

This is also handy for composing messages to be uploaded to a BBS. Composing messages off-line and then uploading can save a lot of on-line charges. BBS

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```

RamDisk:dirlist      K AI   line 7   col 23
Directory "pix:" on Monday 13-Sep-93
B&WMac.iff.info      460 ---arw-d 05-Apr-93 20:19:18
brickwall2.lo.info    460 ---arw-d 24-Mar-93 22:45:45
babylon5.dctv.info    948 ---arw-d 24-Mar-93 22:45:34
babylon5.rawdctv.info 947 ---arw-d 24-Mar-93 22:45:31
B&WMac.iff           3824 ---arwed 05-Apr-93 20:19:18
Chow.pic.info         236 ---arw-d 24-Mar-93 22:45:41
AMIGAWB-FONT.IFF      7842 ---arwed 24-Mar-93 22:45:47
CDTV.ReadMe          1395 ---arwed 11-May-91 23:38:16
Candle.info           1823 ---arw-d 24-Mar-93 22:45:40
  
```



normally don't support wordwrap; thus lines longer than a specified length are often truncated.

## Bookmarks

If you've never used bookmarks, you're missing out. These allow you to return quickly to specified locations, extremely helpful in large documents. Three user-definable and one automatically defined locations are available in a document.

## Other Features

CED features multiple-level undo and redo. You can also have multiple windows, called views, open simultaneously. Each view can be a different file or a single file can have more than one view.

If you are importing text originating from a computer platform that includes a carriage return with every linefeed (e.g., MS-DOS), CED provides a way to strip those unneeded carriage returns out of a file.

For the programmer, CED has a "matching token" feature. When the cursor is over a parenthesis "()", bracket "[]", brace "{}", or C language comment "/\* \*/", CED will locate the balancing punctuation.

Nearly every command has a key-stroke equivalent. Stored command sequences called macros can be assigned to user-defined keystrokes. You can use this to emulate other editors. Macros can be edited using a separate utility provided with CED. Of course, ARexx is also fully supported.

A user can define many environmental and operational preferences. Multiple preference files can be saved, but only one can be the default. The screen mode is selectable as well as the scrolling routines. This last feature makes CED more compatible with my Retina card by allowing me to turn off the custom screen-scrolling routine. You can even open CED on any public screen. Although good old Topaz 8 is the default font, virtually any fixed-space (i.e., non-proportional) font can be used. Tabs can be set equal to a specific number of characters and be automatically converted to spaces.

Other features include automatic indentation, imbedded printer escape codes, numeric ASCII input, word case toggle, 2.0-look under 1.3, 4000 characters per line

limit, AGA support, adjustable task priority, icon creation with definable default tool, and automatic Caesarian encryption/decryption.

## Better Save Than Sorry

Various methods of saving are available. You can do a standard save, whereby a file simply replaces an existing file with the same name. The safe save mode first saves to a temporary file. When finished, CygnusEd deletes the old file and renames the temporary file to the old file's name. This prevents you from losing the old file should a power failure occur during a save. A similar backup mode is also available, where the old file is preserved with a .bak extension. Automatic timed-backups are featured as well. If you fall victim to a system crash, a separate utility will scan memory to find CED data that existed prior to a crash.

## Improvements?

A list of keyboard shortcuts would be very helpful. Also, I wish more of the standard keyboard shortcuts were used. Amiga-s, for example, is not used for save;

it is used for search. To save a file, you use Amiga-w for write. (Note: it is possible to bind operations to different keystroke combinations using macros.) Also, keyboard shortcuts are confusingly case sensitive. So Amiga-W is not the same as Amiga-w; Amiga-W is in reality Amiga-shift-w.

Shortcomings aside, CED has become my text editor of choice. It has many other features, but I've tried to highlight the important ones. Sure, you could get by with a freebie editor, but CED makes so many things so much easier, it's worth its price.

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—CSA & GVP continued from page 19

If your Amiga 1200 already has an internal IDE hard drive, you can leave it in place. The system will access the IDE drive as well as any external SCSI devices. You can select the boot partition and drive by setting the boot partition's priority to a higher value than any of the others. If you set the boot flag on several partitions, you can also use AmigaDOS 3.0's boot options to choose a boot partition. AmigaDOS 3.0's boot options can be accessed by holding down both mouse buttons after the computer is powered on or reset.

The setup software and manuals that GVP provides with the system are good examples of what should be provided with this type of expansion card.

### Recommendations

Comparing the two systems, the CSA Twelve Gauge is the clear winner with regard to processor performance. CSA's processor power is not cheap; the basic system with just the 50MHz 68030 and SCSI interface will set you back about \$600. Adding a math coprocessor and some RAM to the system will drive the price up even higher. The basic GVP SCSI/RAM+ sells for little more than \$200. If you add a math coprocessor and 4MB of Fast RAM to the GVP system you will triple the cost. As far as SCSI performance is concerned, GVP's SCSI host adapter is the clear winner. Oddly enough, neither board includes a battery backed real-time clock-calendar. Fortunately, other clock options are available. For example, DKB software offers an Amiga 1200 clock-calendar accessory that sells for less than \$25.

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DKB has introduced a new Amiga Zorro III memory expansion board that allows users who own the Amiga 3000, 3000T, 4000, or 4000T to expand their memory all the way up to 146MB. They now can store an hour of CD-quality audio, hundreds of animation frames, or work with huge 24-bit images. The board allows mixing various memory chips at the same time. So they can have a few 4MB SIMMs along with some 32MB modules and then add some 16MB chips. The board will install in any slot and does not stick out or prohibit any other boards from being installed, despite the large amount of storage for SIMMs the board contains. The board can either come with memory SIMMs already on it or the user can purchase the board and add the chips at a later date. SIMM installation is rather straightforward; however, there are a few requirements. They must be no taller than 1.25" and no wider than 4.6". Step-by-

step instructions are included in the manual on how to install the SIMM modules. SIMMs must be installed one slot after another; it's not possible to skip a slot. The manual suggests installing SIMMs with the largest memory in the first slot, the second largest memory in the second slot, and so on.

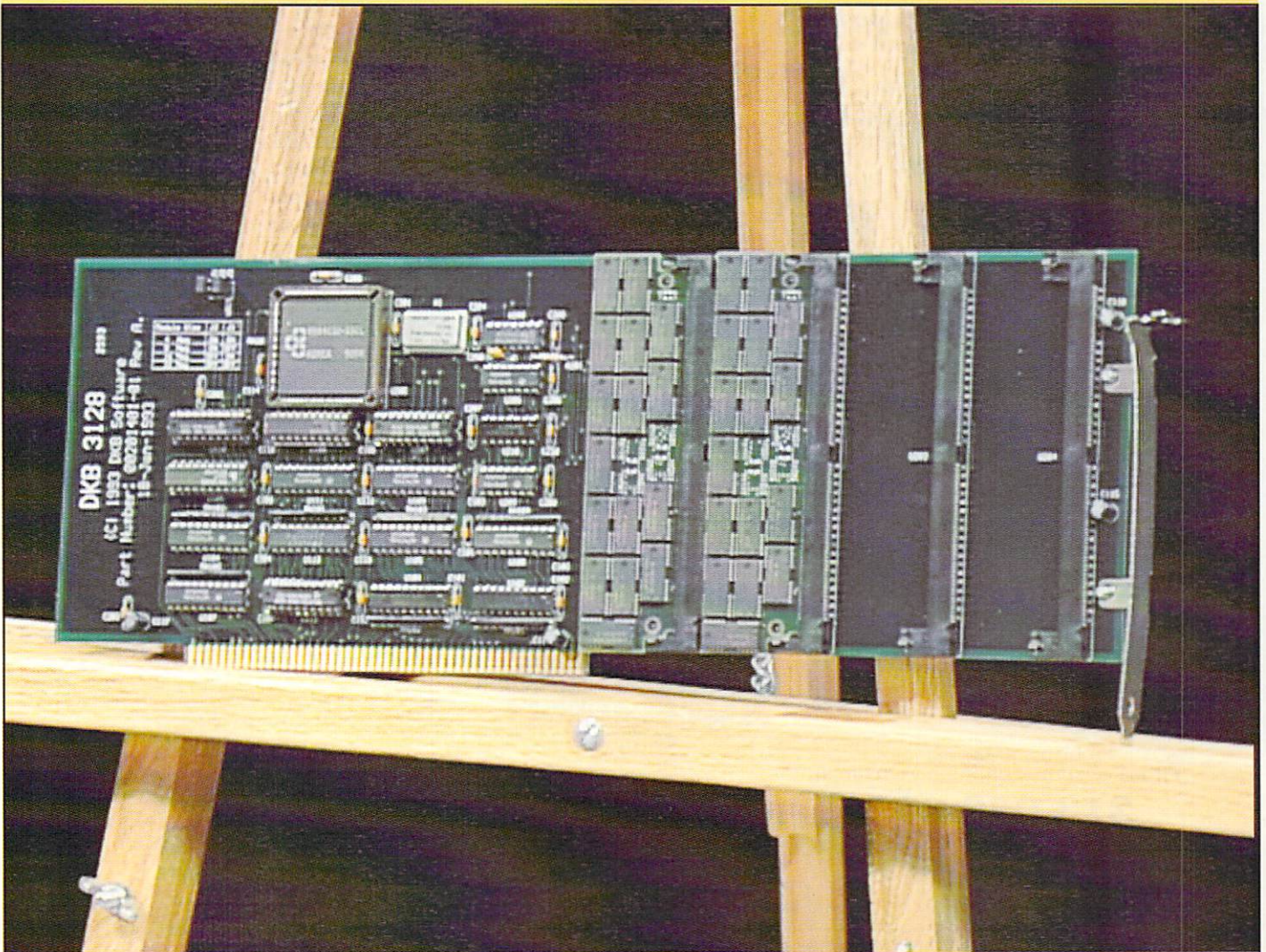
There are some jumpers on the board itself and you may need to change the blocks on the pins if you are using one or more 8MB SIMMs or one or more 16MB SIMMs. If you are using only 4MB SIMMs, then the jumpers should be left in the de-

fault factory position. Moving the jumpers is easy and straightforward and should not present a problem to most users. There are very detailed instructions on how to install the board in either an Amiga 3000 or an Amiga 4000. The step-by-step instructions leave little margin for error and they insure that a properly configured board can be installed in a few minutes. There is an included "3128 Program" that can be installed to run on startup. This is needed only by users who mix and match different sizes of SIMMs, like 4MB and 16MB. The program

## DKB 3128

# Zorro III Memory Expansion Board

*by Frank McMahon*





was not included in my review package, but I didn't need it anyway since all memory modules were the same size—two 16MB SIMMs plus the 12MB already in my 4000 for a total of 44MB! There are some various trouble-shooting tips in the manual that provides answers if there are specific problems.

Well I must say that working with 44MB on my Amiga 4000 was certainly heaven! First off, I copied an entire 22MB directory of 24-bit images to ram. I used Art Department Professional to load them quickly from RAM and realized amazing speed. Animation users and more specifically Video Toaster 4000 users will benefit from

going beyond the Amiga 4000's traditional 16MB limit. Since the new Toaster can play animations directly out of RAM, the ability to utilize 146MB of RAM is promising indeed. The DKB 3128 Memory Board is easy to install and autoconfigures; however, there is a dark side and it's not DKB's fault. When Commodore released the Amiga 4000, they still had not completed development on the Zorro III device standard. Zorro III compatibility was included in the 4000 (and 4000T) but there were no Zorro III cards to test at the time. Now there are Zorro III boards out...and they don't work. So Commodore had to release an upgraded CPU card to be fully compatible with Zorro III expansion products. At press time it's a little unclear about what, if any, charge will be incurred to the end user for getting a new CPU card to ensure Zorro III compatibility; contact your local authorized Amiga dealer for details. The bad news is that most of the 4000s out there have the original design of the CPU card (3.0) and need to be upgraded to 3.1 or higher before this card or Commodore's own 4091 SCSI host adapter, for that matter, can be used.

Once you have the correct CPU version, you'll find the DKB 3128 Memory Board very expandable, easy to install, and a tremendous benefit especially to multimedia users dealing with large sound files, huge animations, or super bitmap 24-bit files.

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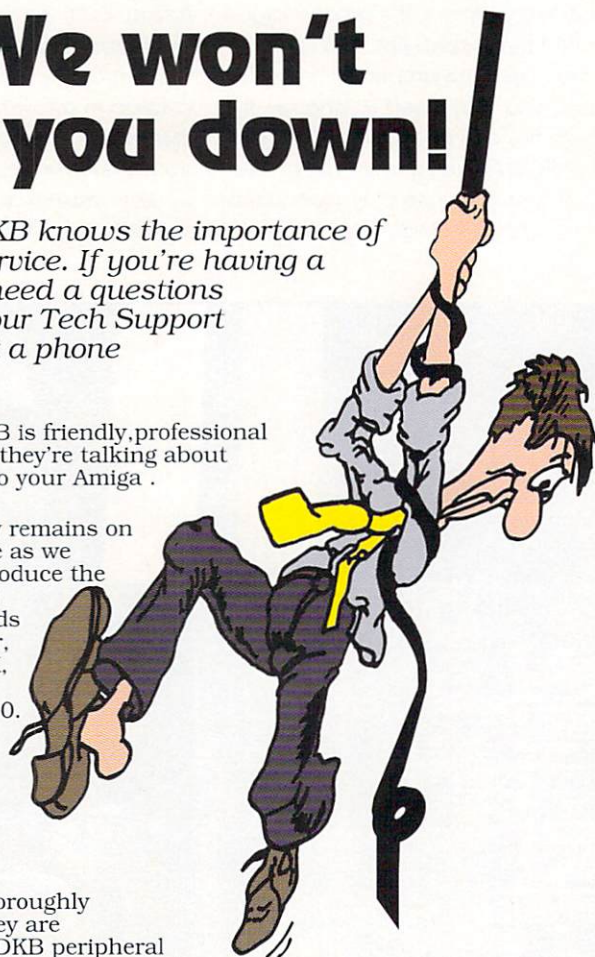
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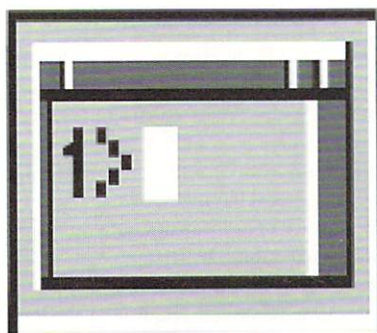


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# cli by Keith Cameron directory

## Customizing Your Shell Window, Part 1

I've never pretended to be an expert on AmigaDOS. In several of my columns, I've even poked fun at my lack of expertise (that's a nice way of saying ignorance) with computers. I do, however, pride myself on several things. First, I think I am capable of reading and following well-written instructions. Second, I think my writing is clear enough that others can follow my instructions.

For a long time, I've been meaning to do something about the default Shell window on my computer. I've always been slightly annoyed that it opened to only half a screen. Personally, I prefer a full screen to work with, especially when getting listings of directories. So, I turned to my AmigaDOS library for some help in customizing my Shell window, and that's when the trouble began.

Since we've been examining script files the past two months, I felt like now would be a good time to tackle this problem. The project I wanted to work on was customizing the Shell window, and that is my primary goal in this article.

First, I'll share my experiences with you and show how I solved my problems. Then, if any of you have had similar experiences and know of a better way to handle the situation, I invite you to write in and share your solution(s) with the rest of us. I'm sure that there are some logical solutions, but after dealing with those manuals, my head is spinning too much to see things clearly. For now, let's wade through the areas I feel competent in.

### Getting Started

We'll start at the beginning by looking at a few script files that are already in place. The best place to start is with a file in the 's' directory called "shell-startup." Anytime that a Shell window is opened, your Amiga looks to this file for instructions as to how that Shell window is to look. Printed below is that script file from version 2.04. Take a look at it.

```
alias xcopy "copy clone "  
alias emacs memacs  
alias clear "echo ***E[0;0H*E[J*"  
alias reverse "echo ***E[>1m*E[30;41m*E[0;0H*E[J*"  
alias normal "echo ***E[>0m*E[31;40m*E[0;0H*E[J*"  
prompt "%N.%S> "
```

Don't worry if much of this looks Greek to you; I'll cover everything before we finish this project. For right now, just take my word that any Shell window you open can execute the above commands. For example, if you were to execute the command "reverse" on a command line, your background would turn from its usual grey to black. The "normal" command would return it to the grey background. Try it if you like. (NOTE\* You must be using a recent version of AmigaDOS for this to work; older versions don't have a "shell-startup" script file.)

The point to remember at this time, though, is anytime you open a new Shell window by executing the NEWSHELL command from the command line or by double-clicking on the Shell icon from the Workbench, that Shell window will have these characteristics. We are going to change that.

The first step you need to take is to change the name of the "shell-startup" file. You don't want to delete it for you may wish to restore it at a later time. I suggest you keep it in your 's' directory but simply rename it to something revealing, like "old-shell-startup."

Now you are ready to create your own script. Using your text editor, create a new file called "shell-startup." We will return to this file from time to time over the course of this project and add lines to it. For now, we will only select a prompt.

You can use the PROMPT command to change the prompt string of your Shell. To execute it, you type the PROMPT command followed by the string you wish to use. The default string is "%N.%S> ". The 'N' is used to call up the Shell number (if this is your fifth Shell window opened, for example, the number would be 5) while the 'S' displays the current directory. You can also add another feature if you like, and this is the return code of the last operation. To do this, you would include "%R". If you only used one of these substitutions, you would not include a period; you only use the period when more than one of these is used. The space is needed after the '>' sign to ensure a space between the prompt and the command line you enter.

You can use other prompts as you like. For example, if you wanted a friendly prompt, you might try something like this:

```
PROMPT "Good Morning, Keith> "
```

Remember that quotation marks are necessary any time spaces are used. One of the most useful prompts, at least for me, is to have the date printed. Here's how it is done.

```
PROMPT "`date`> "
```

First, note that the backwards apostrophe is used. It is located above the TAB key on most keyboards. For a long time, I tried using the apostrophe which shares the same key as the quotation mark, and I couldn't figure why this command wouldn't work. When executed, it will provide the day of the week, the date, and the current time. Although useful, it is rather long and consumes much of the command line. Although this doesn't affect the performance of execution since lines do wrap in the Shell, it visually bothers me somewhat. There is no end to what you can change your prompt to. Put your own name in there if you like.



After you insert a line fixing your prompt, go ahead and close and save the file for the time being. We will return to it later. As of now, there are no problems and everything is working fine. The problems begin when we start trying to alter the size of the Shell window.

At this point, we need to look at part of another script file in the 's' directory. In the file called "startup-sequence," there are three lines of particular interest for our project. I have reprinted these below:

```
if exists s:user-startup
    execute s:user-startup
endif
```

If you were to list all of the files in your 's' directory, you would not find one called "user-startup." It does not exist until you create it. Once it does exist, though, these three lines from the "startup-sequence" will cause it to be executed.

What we want to do is create that file. As before, create a file of this name using your text editor. In it, we will add a command line to further customize your Shell window.

Rather than resizing your Shell window by dragging the sizing gadget with your mouse, it is possible to do by using the NEWSHELL command. Basically, the NEWSHELL command by itself simply opens a new Shell window. However, when used with the proper arguments, it can specify the size of the window. Here is an example.

```
NEWSHELL CON:0/0/640/200/TITLE/OPTION
```

This looks like a mouthful, but it really isn't. First, CON simply refers to your console window, and it is not a command. Next you have four numbers. If you are familiar with programming, you will pick up on this quickly. Your screen measures 640 pixels from left to right and 200 pixels from top to bottom. A pixel is basically a dot of light on the screen. It is these dots of lights which make up the pictures, the letters, and everything else you see on the screen.

The first number indicates how far from the left border of the screen you want your Shell window to appear. If you were to put 320 there, your Shell window would start about the middle of your screen. The second number indicates how far from the top of the screen you wish your Shell window to appear. If you were to put 100 there, it would appear about halfway down the screen.

The third number shows the width of the window as measured in pixels. If you selected 320 as your first number, then 320 would be as large as your window could be, for you have already used half your screen. Likewise, the last number is the height of your windows, again measured in pixels. Once again, if you selected 100 as your second number, then 100 is as high as your window can be.

Since I like plenty of room, I use almost a full screen. You might like to set yours so that the window does not cover the space of a menu bar in case there is a window behind your Shell window. That way, all you need to do to make the other window active is to click in its exposed menu bar. Likewise, I've noticed that with a few programs in multitasking, the front-to-back gadget does not work in the Shell window. If you have noticed this, you might like to leave a little space on the right hand side of your screen so that other front-to-back gadgets are available. Thus, you might like to try these settings: 10/0/630/190. If they don't work, experiment until you get exactly what you want.

Now, let's look at the last two items. The title can be whatever you want. It's best to keep it one unspaced name. You might try something like "SuperShell." The choice is yours. The final item is an option, and there are several to choose from. These are AUTO, CLOSE, BACKDROP, NOBORDER, NODRAG, NOSIZE, SCREEN,

SIMPLE, SMART, and WAIT. Let me quickly highlight their features.

AUTO will cause the Shell window to appear whenever it needs to, in general. CLOSE features standard gadgets like the close gadget and front-to-back gadgets. BACKDROP causes the Shell window to appear behind all Workbench windows, and you cannot bring it to the front: you have to resize the Workbench windows to make it usable. NOBORDER is exactly what the name implies. NODRAG is, again, what the name implies. Additionally, it has no close gadget. NOSIZE cannot be sized, only depth adjusted. SCREEN opens only on a public screen. SIMPLE allows text to expand to fit the size of the window when it is enlarged. SMART is the reverse of SIMPLE; the text does not expand (seems backwards to me). WAIT windows can only be closed using the close gadget. I have intentionally left off another option, as it is intended for programmers only. If you are reading this article, you probably aren't a programmer. For me, the best choice is CLOSE. This provides all of the familiar gadgets.

After you enter this NEWSHELL command line in the "user-startup" file, save and close it. Now, whenever the computer boots, this Shell configuration will be present.

This is where the problem begins.

It is my understanding that when a new Shell window opens, it assumes the characteristics of the previous one. However, this is not the case in this situation. When I open a new Shell window from my enlarged one as specified in the "user-startup" file, I am presented with a window half a screen in size. Why?

Well, I experimented with different ideas. Let me share one of these with you. Since I wasn't having any luck with the way things were, I put the NEWSHELL command line in the "shell-startup" script file. This seemed logical to me, as I wanted my Shell windows to use these features when they started up. After I put in the line, saved and closed the text editor, I typed NEWSHELL in my command line and executed it. Then I sat back in total bewilderment as Shell window after Shell window opened until all of my memory was exhausted. Then I had to close a few dozen Shells to return to my original window. Being the genius that I am, I inspected the command line, making sure all punctuation and spelling were correct, and made little changes here and there. Well, three hours later, things hadn't improved, especially my temperament.

Then, suddenly, it occurred to me. Whenever a new Shell is opened, it looks to the "shell-startup" file and all commands in that file are executed. Since the NEWSHELL command was present there, it would execute that command, thereby returning again to the "shell-startup" file where the command was executed once again. I was trapped in an endless loop. It's kind of like sitting in a barber shop with windows on both walls. You look in one mirror and see the other mirror reflected in it. It, in turn, reflects the original mirror and itself, and the process is repeated. Anyway, be extremely careful not to put a NEWSHELL command of any sort in the "shell-startup" file.

To resolve my problem, I used the ALIAS command along with the NEWSHELL command in the "shell-startup" script file. I'll reveal this method to you next month, as well as how to use escape sequences for customizing the color and text style of your Shell windows. In the meantime, send in any ideas you have.

•AC•

Please Write to:  
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P.O. Box 2140  
Fall River, MA 02722-2140



## AMAX II+ and GVP PhonePax

Ned Bagno of Concord, CA, writes with a comment about using his AMAX in conjunction with the GVP PhonePax. Ned's system is an A3000 with Workbench 2.1, 4MB of RAM on the motherboard, a Supra RAM board with 2MB, the AMAX II+ board, and the GVP PhonePax board.

*You cannot use the serial port with AMAX and the PhonePax board phone line plugged in. When using a terminal program on AMAX, the system will hang up. I called GVP about this problem and they suggested quitting the PhonePax lineman program. This did not work. The only solution that would work was to disconnect the incoming phone line to the GVP board. Please let me know if you have any solutions or workarounds.*

## Printing Problems with Golden Gate PC and AMAX II Emulators

Robert Eng of Irvine, CA, writes with a printing problem he is having only while using two emulators in conjunction with his Panasonic KX-P1091, an Epson-compatible 9-pin dot matrix printer. Though Robert has reported his problems to the respective hardware manufacturers, either he has not received replies, or the information provided has not solved the problem.

*With the Golden Gate 386SX running, I have experienced problems printing in both near letter quality or draft quality modes under certain PC programs including WordPerfect 5.1 and Quicken 6.0. At various points a letter or a space is doubled. The problem does not seem to appear if printing at the DOS level by using the Print command, but if printing is done by using the Copy command, then printing stops frequently with an error message requesting the user to abort or retry. I have tested Vortex's suggestion without success that the printing problem may be due to some Amiga programs running in the background.*

*With AMAX II running and ImageWriter emulation selected, the printer inserts several line feeds at the top of each page. I have written to Readysoft but have received no response.*

The one symptom Mr. Eng mentions that might be relatively normal occurs when using the Copy command to print; the printing stops frequently with an Abort, Retry, Ignore error. I don't know the size of the Panasonic's internal print buffer; however, if it is small, the printer will signal DOS that it cannot accept any more text when the buffer fills, and before it can accept new data from the computer, DOS complains that the printer won't accept data, and asks the user to abort or retry. Usually a retry will continue the process. Installing more memory in the printer would probably be one solution to this problem. If you have any other suggestions for Mr. Eng, send them along.

## Compile Errors in DICE C Compiler

Paul Gittings of Glebe, NSW, Australia, writes with a couple of bug reports concerning Matt Dillon's DICE C compiler, and a workaround.

*In version 2.06.19 DICE, function calls of the following type will not compile; they will result in a compile time error;*

```
afunc( (aptr ? aptr->field : 0) );
```

*where aptr is a pointer to a structure, and field can be the name of any field within that structure. This bug will cause problems for people using this version of DICE as a back end for Comeau's C++ compiler; since the C++ compiler makes much use of this construct when compiling C++ code, which uses the Object Oriented extensions of C++.*

*The above bug has been fixed, but I do not know in which version of DICE the fix first appeared. I do know that version 2.07.56 of DICE does not have this problem. However, version 2.07.56 has another problem. The following program will not compile:*

```
extern struct a structure test;
```

```
main()
{ }
```

*DICE complains that there is an "Undefined structure tag" in the first line. I was able to compile the above program using gcc on the Amiga and with the standard ANSI C compiler supplied with SCO Unix, so I assume that it is valid, albeit unuseful, C program.*

*This newer version of DICE also causes a minor problem for Comeau C++. When this version of DICE generates warnings, Comeau C++ acts as though they are errors and stops. The fix is simple; edit the como.rexx file and search for the first occurrence of dcc; a few lines below should be the following line:*

# bug bytes

tips

hints

workarounds

suggestions

updates

fixes

by John Steiner

```
if rc == 0 then do
```

Change it to:

```
if rc > 5 then do
```

*This will stop Comeau C++ from halting when the DICE compiler generates a warning.*

## Correction for "Keeping Your Cool II"

Gerald Bonnstetter writes regarding the article "Keeping Your Cool II" in AC V8.10. He noticed a problem with the description as to why a resistor might or might not be needed.

*The explanation on page 44 as to why a 100-ohm resistor should be used is wrong. A 12-volt fan that draws 0.1 amps can safely be connected to a 12 volt, 1 amp power supply. No fan overload will occur because of the current differences. What the 100-ohm resistor will do is reduce the voltage and current that goes to the fan below 12 volts at 0.1 amps. This will make the fan run slower, move less air, and probably run quieter. If the fan is getting at least 7 volts, then it would be ok to use the fan with a resistor in series.*

*Some Amiga 1200s came with a smaller power supply so they might need the 100-ohm resistor in series with the fan to keep from overloading the power supply. These Amiga 1200s only have 0.5 amps available at 12 volts and if the rest of the system uses more than 0.4 amps, the 100-ohm resistor may cut the current to the fan just enough to make everything work. But if this is your problem, a better solution is to buy a bigger power supply and don't use the 100-ohm resistor.*

*A related comment, the explanation at the end of page 44 as to what to do if the cooling isn't enough: I say first take out that resistor; you don't need it and the fan will run faster without it.*

## The Director Is No More

Andrew Porter writes with e-mail regarding my request for information in "Bug Bytes," V8.9, regarding The Director version 2 from The Right Answers Group.

Mr. Porter was putting a proposal together and he needed confirmation whether or not The Director is dead so he wrote to Keith Doyle. Keith's reply is that there is no further work being done on The Director by Right Answers. He notes that there is an experimental AGA-compatible projector that can be made available, though it has a memory leak (every time you run it, 8-16K is left allocated). There may also be a solution for some people for future Director enhancements, but not for at least six months because of remaining contractual obligations.

Mr. Porter writes, "I am currently looking at other products such as AMOS, which may be a capable substitute. I'd suggest that Robin Hoare, who first wrote of the missing support, do the same."

## Service Problems From Commodore

John Gager of Walla Walla, WA, writes via e-mail regarding a problem with his 4091 SCSI-II controller on his A4000.

*As you probably already know, early 4000s had to be upgraded with a new motherboard so the SuperBuster chip could be replaced. About the same time, I learned that the 3.0 68040 processor board would need to be replaced with a 3.1 revision before the 4091 would work properly. Well the motherboard and processor board were replaced on August 12 by a repair center. At that*



time, I knew that the 3.1 processor board was supposed to have a revision 02 PAL for U209 (391472-02). The 3.1 processor board that my repair center received had the old revision -01 PAL, and the 4000/4091 operation has been flaky to say the least.

Another processor board was ordered in August, but I have been waiting since June to get these problems resolved. Whenever I call SMG (Commodore's new contract service and parts supplier) to inquire about it, I get the standard "backordered" reply. Today I called CBM's customer relations, and although the lady I spoke to was sympathetic, she could only offer her apology, and told me how bad things were at Commodore right now.

I come to you hoping that you might be able to print this in *Amazing*, or get somebody at CBM to take notice.

Jim Choate also writes about information on repairing or locating replacement units for the CDTV CD-ROM drive mechanism.

It is a Matsushita CR-511-B unit. I have contacted Commodore and their contract service organization without receiving any support. The unit is out of warranty, as it is three years old.

I asked Mr. Choate to provide me with more details as to what Commodore and their service agency told him about availability of a replacement drive unit. When I receive that information, I will forward copies of both Mr. Gager's and Mr. Choate's letters, and a copy of this column item to Commodore directly. I hope that Commodore officials will look into these complaints and see what needs to be done to expedite service. I visited my Fargo, ND, Amiga dealer and asked if there have been any problems with products ordered here, and he noted that there have been a few items on back order, but at this point there have not been any major delays in providing service to Fargo area customers.

### Networking an A3000T With MS-DOS Ethernets

The V8.10 issue of "Bug Bytes" included a letter from John Klos regarding his options for networking an A3000T to an MS-DOS network. Mike at Oxix writes with a response to my reader inquiry.

After reading your "Bugs Bytes" column, I came across the question regarding networking. I'm the programmer of Amiga Client Software for Novell Netware by Oxix. As far as I know, there is nothing which allows you to connect an Amiga to Netware Lite. What Klos suggested about the BridgeBoard will probably work, though.

### Workbench 3.0 Bug

Henning Vahlenkamp writes via e-mail with a bug report.

I think I discovered a possible bug in AmigaDOS 3.0. Whenever I use the VERSION command on the mathicedoubbas.library, the system crashes with a 81000005 alert (corrupted memory list). This doesn't happen with any other system file. Does anyone know of any other bugs in the OS?

### Online! Bug Fix

Three readers sent e-mail letters regarding a bug fix for the screen size bug in *Online!* by the now defunct Micro Systems Software. Robert Du Gaue, the Amiga Editor and Columnist of *AmigaNotes*, reminded me that the required bug fix was published in an earlier "Bug Bytes." Harv Laser of Portal's Amiga Zone commented that a bug fix for this problem was available as well, and Tom Waterstraat of Fairport, NY, SysOp of FileWorks BBS, sent along the bug report as originally issued from MSS Software. For those who missed the previous report and need the bug fix, here is the solution.

The problem occurs only for users of AmigaDOS 2.0 who are running a Platinum series program. When the application opens a window, it is larger than the screen on which it opens. This places the bottom and right edges of the window beyond visibility. This happens because Commodore changed the method by which a program identifies the existence of an A2024 monitor between AmigaDOS 1.3 and AmigaDOS 2.0. A patch is needed to have any Platinum series program open a screen size window.

The Platinum series custom screen is checking for a WorkBench version greater than 1.3. If found, the program tries to open an A2024 screen. This patch nullifies that check and inhibits any attempt to open an A2024 screen.

First, make a new working copy of the master disk. Then, in an object editor program (such as NewZap, Sectorama, DiskWick or Disk Mechanic's Workshop) look for this sequence of eight HEX bytes on the working copy:

```
0C 40 00 22
60 00 00 84
AA
```

and replace it with:

```
0C 40 00 22
60 00 00 84
AA
```

Finally, save the change.

The fifth byte in the sequence changes. Remember, do not alter your master disk; modify a working copy. Also, the Platinum\_Works! file should be altered, not the application modules.

### Saving Preferences in Bars&Pipes Professional

Max Yoder of Arlington, VA, writes via e-mail with a comment on Bars&Pipes Professional.

V8.10 of AC contained a review of Bars&Pipes Professional. Among other things, it complained about not being able to save one's preferences thereby creating a lengthy "sign-on" process each time the program was initiated. It took me nearly a month to figure out the solution to this one and I pass it along to your readers. The problem arises primarily when the B&PP program is not located in the boot partition. The preferences are stored in a file called *bppdirs*. This file is located in the "s" directory and also in the "support" subdirectory of B&PP. The file in the "support" subdirectory is the one that gets modified (and even replaced if it is missing), but the one in the "s" directory is the one that is called upon each program initiation. The problem can be circumvented by replacing the "bppdirs" file in the s directory with the one in the "support" subdirectory. This must be done each time the B&PP preferences are changed.

A more serious bug not mentioned in the review and one for which I solicit advice—B&PP acknowledges the problem but has offered no solution—is that although B&PP will properly input MIDI music generated with other computer programs, show it properly in staff notation, and print it out properly, it seemingly cannot be conditioned to generate music with the proper note values or to print out such music, as originally inputted. To be more specific, if the resolution is set at 1/8 notes, a quarter note is notated as a pair of tied 1/8 notes. If resolution is set at 1/4 note, a whole note is notated as four tied quarter notes. This happens either when music is input from a keyboard or manually put in with the "pencil" function on the staff. This rather serious bug renders B&PP virtually useless for most music teachers who need to compose and print out music of varying degrees of difficulty for their students.

### Commodore Free Software Bundle Missing

Roger Dooley of Winchester, TN, writes regarding the free software bundle that he was to receive when he purchased an A1200 in April '93.

I sent in the appropriate paperwork to receive the free bundled software from Commodore, which was Final Copy 1.3 and DeluxePaint AGA. Then, I waited and waited. Finally, I discovered a phone number to call to inquire when the software would be delivered. An answering machine dutifully (always) answers the phone and the run-around starts. The software is back ordered, the software is in and will be shipping soon, the software is back ordered and soon. Well, its September '93, and after many calls to this number, no software has been delivered.

Have other users had this problem as well? Contact me if you have been waiting an overly long time for your software bundle.

•AC•

If you have any workarounds or bugs to report, or if you know of any upgrades to commercial software, you may notify me by writing to:

John Steiner  
c/o Amazing Computing  
Box 2140  
Fall River, MA 02722

...or leave e-mail to  
John Steiner on Portal  
73075,1735 on CompuServe  
Internet mail can be sent to  
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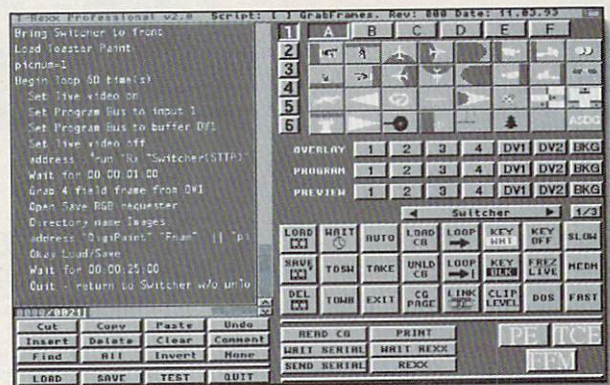
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# CanDo:

## An Interactive Authoring Tool

INOVAtronic has released version 2.51 of *CanDo*. The upgrade comes on three diskettes but does not include any printed pages for updating the manual. All the new features of version 2.51 are described in help files on one of the diskettes. The cost of the upgrade is \$25 plus \$5 shipping and handling. I have been playing with this new version for some time now and would like to relate my experiences.

### Installation Choices

CanDo 2.51 uses the Installer utility supplied by Commodore to install itself. For those unfamiliar with Installer, it is a program that reads an ASCII script file containing Installer commands. The installation proceeds according to the script. Installer has features that make it much more versatile than a standard AmigaDOS script. It also provides a standard method of installing software on the Amiga. After double clicking the InstallCanDo icon on the installation disk, I was presented with a requester asking me what installation mode I wanted to use: Novice User, with all actions automatic; Intermediate User, limited manual control, or Expert User, with confirmation of all actions. I chose the Expert User mode. I don't know about you, but allowing me to decide only what directory the program should be copied to is not my idea of expertise. I was not even prompted as to whether I wanted to install the example files. However, any unwanted files can be deleted after installation, assuming there is enough disk space to hold everything initially.

I made the decision to install to a new directory rather than overwrite CanDo 2.0, just in case. The full installation of CanDo 2.51 took up about 1.8 MB of hard drive space.

Apparently, CanDo 2.51 requires AmigaDOS 2.x even though I could not find this information

in any of the help files. I became suspicious when I could not read the CanDo 2.51 diskettes on my Amiga 1000 running AmigaDOS 1.3. Upon investigating with my Amiga 2000 running AmigaDOS 2.1, which had no problem reading the diskettes, I found that the diskettes were FastFileSystem (FFS) formatted. If you will recall, FFS was introduced with AmigaDOS 1.3 for hard drives only. You could format floppy diskettes using the FFS, but they were unreadable. If you are still using AmigaDOS 1.3, I highly recommend that you switch to 2.1—immediately!

CanDo 2.51 sports an improved interface as well as a host of other new features.

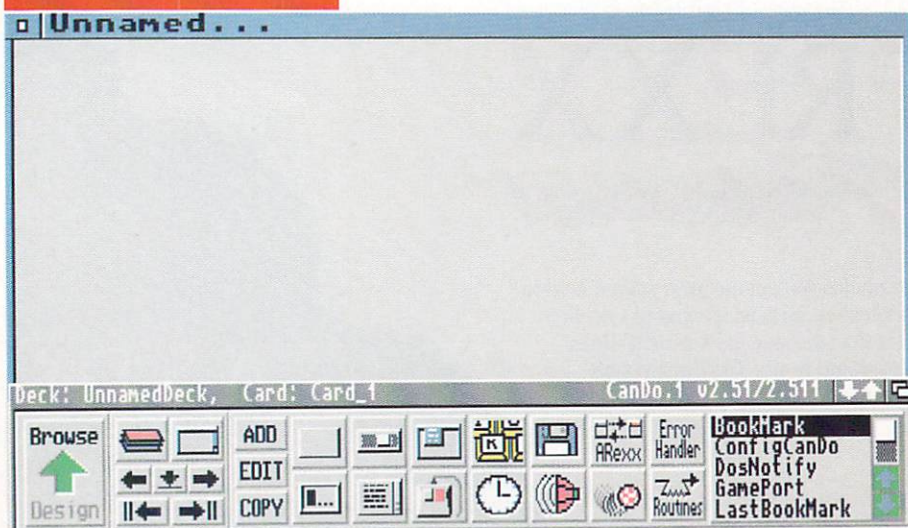


Figure 1. CanDo 2.51 Interface



# Part 4

## New Features of Version 2.51

by Randy Finch

### Standalone Applications

Previous releases of CanDo included a file named DeckBrowser that could be bound with a deck so that it did not require the CanDo shared library. Well, unfortunately, CanDo 2.51 does not include DeckBrowser. Therefore, CanDo.library is required. This library is not freely distributable; it must be licensed from INOVAtronics if you want to distribute it with a program. However, after calling INOVAtronics, I found out that if you are distributing freeware or shareware, you can obtain a free copy of DeckBrowser to bind with your CanDo 2.51 deck. Decks that will be sold commercially cannot use DeckBrowser. Therefore, the software producer will have to purchase a license to distribute CanDo.library. If you are developing commercial CanDo programs and "can do" without the new features of version 2.51, you might want to continue using version 2.0.

### New Interface

The Main Control Panel (Figure 1) was given an (inter)face lift. The two buttons for Browse and Design have been combined into

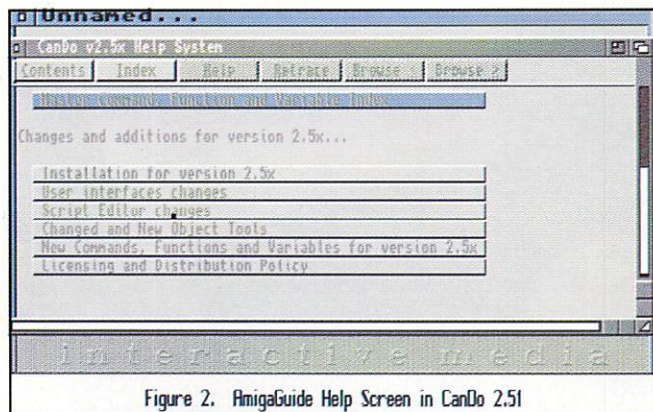


Figure 2. AmigaGuide Help Screen in CanDo 2.51

one big toggle button. The Window Object button was moved from the Objects section to the Cards section of the panel. Copy mode can now be selected via a button rather than a drop-down menu. Two XTra items and one tool in CanDo 2.0 have now been elevated to the status of official objects having their own buttons. These are the Error Object, the RightMouseButton Object, and the Proportional Object. Global routines can now be accessed with a button and the Xtra items now appear in a list directly on the panel.

### AmigaGuide

CanDo no longer uses its own custom help system. Rather, it now uses AmigaGuide, which is a Commodore-supplied help utility (Figure 2). This is good news for programmers who want to add help to their CanDo applications. Why?—because not only does CanDo use AmigaGuide for its own help system, but it also has a new function available, AskForHelp, that allows a CanDo script to access a standard AmigaGuide help file. This addresses my concern in Part 1 of this series, V. 8.9, about having a standard way to add help to a CanDo program. AmigaGuide help files are quite simple to create. They are ASCII files with embedded commands. I will be discussing creating a help file in a future installment.

When I tested the AskForHelp function with a card that used a lo-res screen (320 x 200), the AmigaGuide help window did not appear. After switching to a me-res screen (640 x 200), it appeared just fine. I do not know at this time if this is a limitation of AmigaGuide or if there is an option available that will allow help windows to appear on lo-res screens.

One disadvantage of the switch to the AmigaGuide help system is that you can no longer have command templates automatically inserted into your script. Sometimes you just can't have your cake and eat it too.

AmigaGuide allows you to print all or part of the currently displayed help file via a drop-down menu. One feature I would like to see added is for the window title also to be printed along with the help text. Sometimes the help file does not have any title other than the window title.

One interesting anomaly I have noticed is that the up, down, left, and right scroll button imagery is missing when AmigaGuide is used from within CanDo. However, the buttons are still functional. Also, I could not access the help text for the new

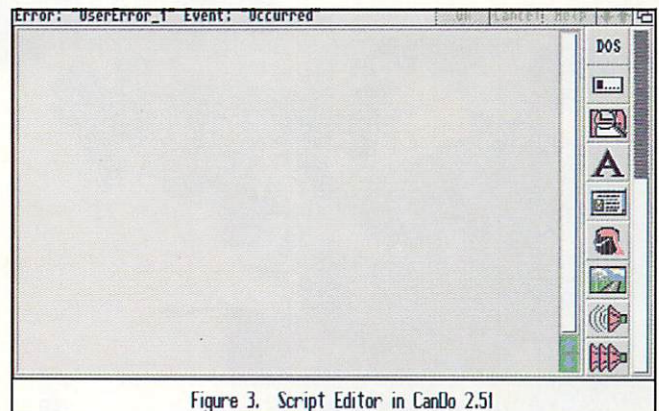
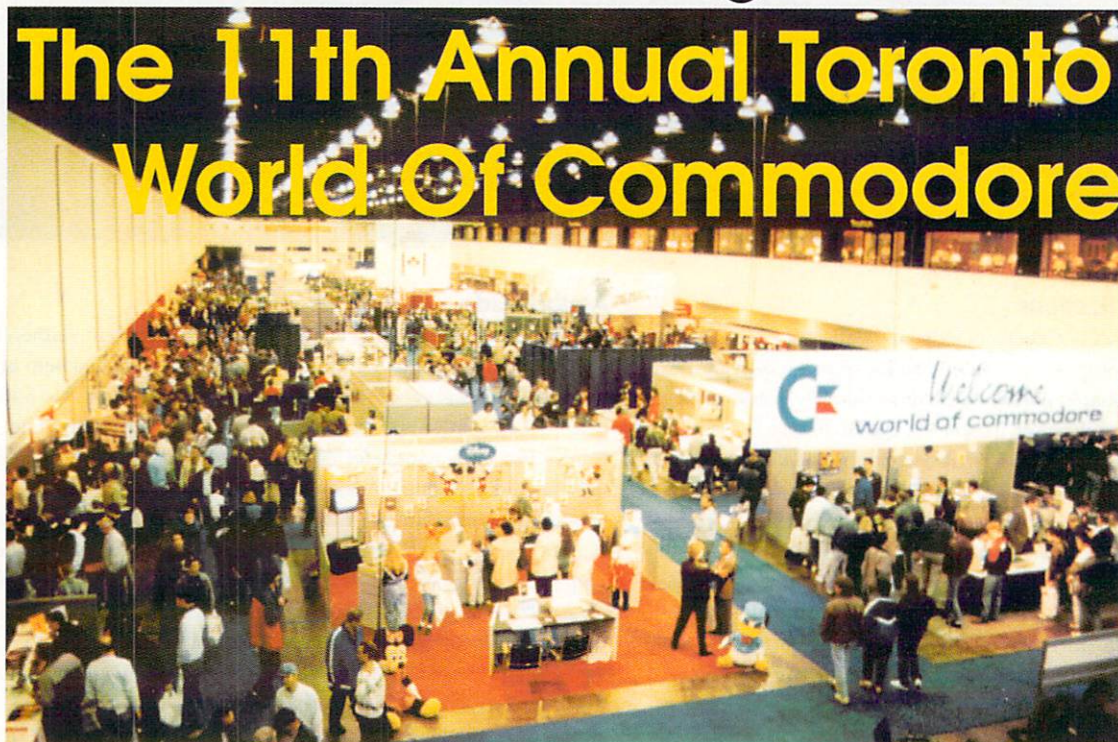


Figure 3. Script Editor in CanDo 2.51



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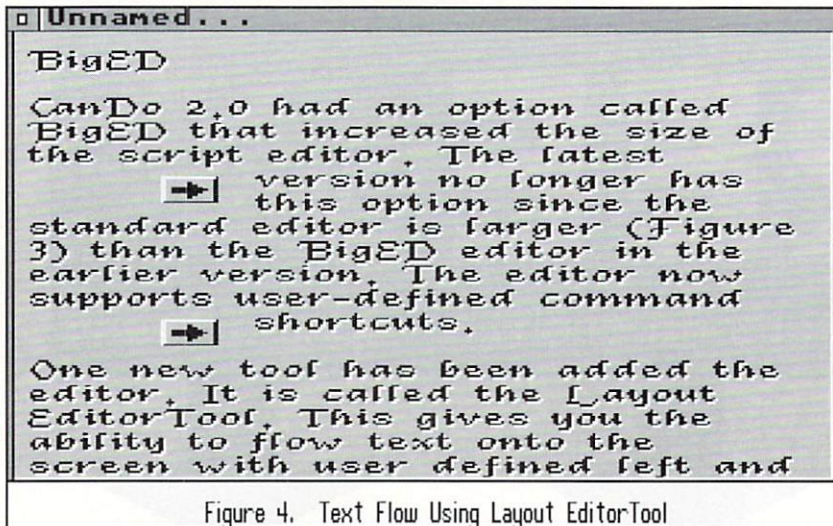
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command InsertBufferList. I have passed this information on to INOVAtronics, who are checking into it.

### BigED

CanDo 2.0 had an option called BigED that increased the size of the script editor. The latest version no longer has this option since the standard editor is larger (Figure 3) than the BigED editor in the earlier version.

The editor now supports user-defined command shortcuts. You must create a file called EditorShortCuts.Doc in the CanDoFiles directory. This file should contain a list of shortcut keywords along with the text that is to be substituted for the keywords. In the editor, you can type the keyword and then press Shift-Space; the replacement text will be inserted. There are two things you should take note of. First, the EditorShortCuts.Doc file is loaded when CanDo loads. Therefore, if you edit the file, you must reload CanDo for the changes to take effect. Second, the keywords are case sensitive. For consistency, you might want to have all lower-case keywords.

One new tool has been added to the editor. It is called the Layout EditorTool. This gives you the ability to flow text onto the screen with user-defined left and right margins for each line of text. This allows you to flow text around objects or graphics (Figure 4). Once you are satisfied with the layout you have designed, the tool writes a script for you. Unfortunately, the layout cannot be changed at run time, only at design time by redesigning the layout and writing a new script or editing the existing script.

### SuperMover

As a complement to the SuperDuper utility that allows you to duplicate multiple objects, a SuperMover utility had been added. This utility allows you to select multiple objects on a card and move them as a group to another location on the card. This will come in handy when creating custom objects as described in Part 3 of this series V8.11. However, I would still like to have the

ability to save a group of objects to disk as a custom object for later addition to other cards at any location without fuss.

### AGA Support

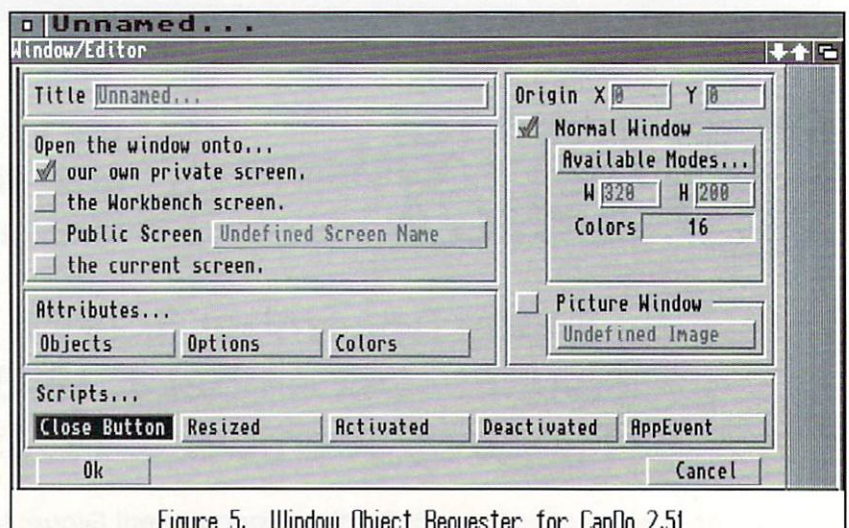
CanDo now supports all the new graphics modes of the AA graphics chip set in the Amiga 1200, 4000, and CD32. When the Window Object button is pressed, a large requester is displayed (Figure 5) allowing you to change everything about the window layout of your current card. A click on the Available Modes button brings up a requester showing all of the screen resolutions supported by your Amiga model (Figure 6). You can also put your window on a public screen.

### Music File Support

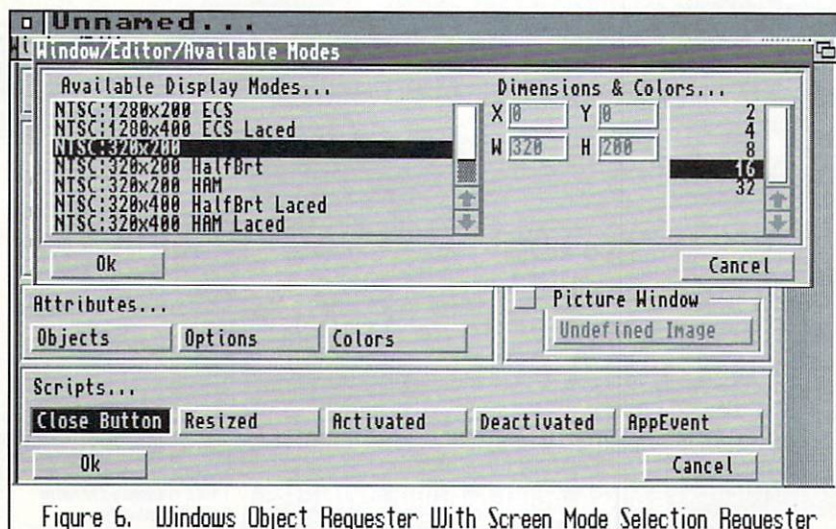
New commands and system variables have been added to support the playback of song files.

What are song files? you ask. Well, after unsuccessfully trying to play SMUS and DMCS files and finding no information in the help files, I called INOVAtronics. It turns out that a song file is either a SoundTracker, NoiseTracker, ProTracker, Oktalizer, MED, or OctaMED module. These modules are played with the support of a shared library named INOVAMusic.library. This is the same library that is used by Directory Opus (DOpus) to play song files. Commands are available to play a song or a list of songs, pause it, resume it, go to the next or previous song, play faster or slower or normally, set the volume, and set the tempo. The period can be adjusted for each channel individually. Also, system variables are available for obtaining the current song name, tempo, and volume.

Now a word of warning: when I tried to play an SMUS, DMCS, or MED 3.00 file, CanDo froze up rather than reporting an error as it should. I could click on buttons and pull down menus, but CanDo did not respond. Sometimes the floppy disk drive containing the file would start grinding and not stop until I rebooted. Other times the light would just blink continuously. I reported this problem to INOVAtronics and they will be investigating. The tech support man I talked to said that they did not support the older MED files, only the newer MED and OctaMED files. He said that if I converted the old MED files to SoundTracker format,







CanDo helps you create professional applications quickly and easily.

they should work. I tried this and it did work—somewhat. Apparently, some information is lost going to this format. I sometimes experienced instruments not sounding right and other times the tempo screwed up in mid-song. Make sure you are trying to play a supported song format. The best way to do this is to try playing the song from within DOpus. It does not freeze up if the format is not supported. If the song does not sound right, you can click on the Play button again and the song will stop. By the way, INOVAtronics said they will add support for the DMCS format when Electronic Arts releases information about the format.

## ASL

When you use the AskForFilename function under CanDo 2.51, you will be presented with the standard file requester (Figure 7) from Commodore's ASL shared library. Gone is the non-standard CanDo file requester and good riddance. This requester was always irritating to me because the OK and Cancel buttons were in reverse order from the standard and the 3-D buttons were recessed rather than raised.

File patterns can be passed to the ASL file requester as well as various flags and mode information. You can even specify that the requester accept multiple file selections.

## Graphics Printing

Two new commands are available for printing the current screen or the current window to the Preferences printer using the current graphics settings. I tested both of these commands on my Hewlett-Packard LaserJet 4 printer and they worked perfectly. (See the sidebar for some important information about the HP LaserJet 4.)

## Summing Up

There are several other new features in CanDo 2.51, such as a requester with user-defined selections, the ability to insert a list of

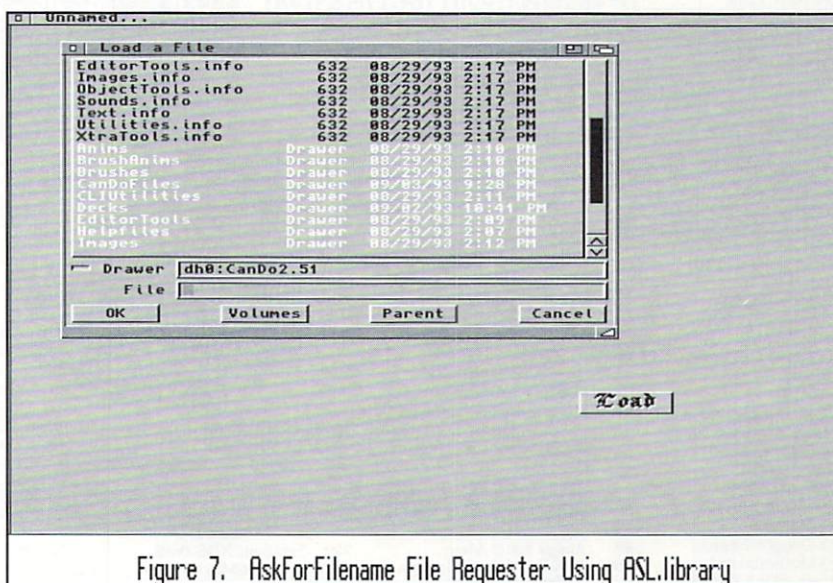


Figure 7. AskForFilename File Requester Using ASL.library

buffers and a list of public screens into a document, matching lines in a document to an AmigaDOS pattern, and turning display promotion on and off. The color selectors used in some of the system requesters now show the color number. The font requester is now cached, allowing faster displays. Also, Compugraphic and Color fonts are fully supported.

All in all, the new features of CanDo 2.51 are well worth the \$30 upgrade cost. I was hoping for more additions, but I guess I will have to wait for version 3.0.

Stay tuned for future installments. I plan to discuss adding help to your CanDo applications, creating Workbench utilities, synchronizing sound with animations, and more.

•AC•

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# LIGHTRAVE

from Warm & Fuzzy Logic

by R. Shamms Mortier

Most of my professional time is spent these days with a handful of Amiga 3-D rendering and animation packages that allow me maximum creativity and experimentation. Being a Toaster owner and user for years, I have come to know NewTek's *LightWave* software well, and have used it to create more than a few magical animations. Using *LightWave*, however, requires that you have a Toaster installed, and the output from *LightWave* lacks the breadth of formats that un-toasted Amigas (especially the newer AGA models) possess. The Toaster board, among all of its professional

applications, acts as a huge protective dongle for the *LightWave* software. No Toaster, no *LightWave*—until now.

The latest and greatest emulator to fly in the face of reality has just been released by a company called Warm & Fuzzy Logic, and it is called *LightRave*. With some stipulations, *LightRave* allows you to run the Toaster's *LightWave* on non-Toaster AGA and non-AGA systems, even in PAL. You have to have the Toaster 3.0 software installed.





Up until recently, by sending in your Toaster serial number, you could purchase the new 3.0 software from NewTek without actually upgrading the board to the newer AGA Toaster 4000 version. This meant that Toaster 2.0 systems could run most of the newer features of 3.0 on an older Toaster. But because of the release of LightRave, and NewTek's fear that a large number of their clientele would prefer the less expensive 3.0 software upgrade rather than getting the board itself upgraded (and perhaps having to purchase a new Amiga 4000 to boot), the software-only 3.0 software upgrade has been discontinued.

The hardware for LightRave is a serial port dongle, nicely coated and painted. With this dongle in place, you can call up LightWave with the *LightRave* software, bypassing the Switcher and all of the other Toaster attributes. If your Toaster is located on one system along a networked line, you can run LightWave on any of the attached systems as well, giving you some pretty awesome render farm capabilities. You can also run LightRave on the same system that the Toaster is plugged into, and have it render frames in display modes that LightWave does not normally address. This is all done automatically, so DCTV users and AGA mode animators are well served.

The LightRave interface screen is a very simple affair. A selection of display modes appears in a list on the left and display information on the right. Some of the display modes have additional options selectable by a mouse click (the DCTV mode, for instance, gives the option of 3 or 4 bitplanes and lace or not). In the version I worked with, the ANIM options were not yet in place. When they are (by December so the developer promises), you'll have access to ANIM5 and ANIM7 formats in either HAM, HAM8, or DCTV. There's also to be an on-board "Play ANIM" utility.

With more options to come, the Display Modes addressed so far include Amiga standard screens, AGA, DCTV, FireCracker, ImageFX, IV24, OpalVision, Piccolo, Picasso, Spectrum, Merlin, Rainbow III, and Retina. This means that any one of these can serve as a viewer for your LightWave renderings. Of course, you can also render standard LightWave RGB or FrameStore frames, though you

can't see the result on the Amiga monitor. A special numeric input area called the "Timeout Period" lists the seconds that you are able to view the rendered scene in the alternate display mode you choose.

## Networking

I have an Amiga 4000 that is Toaster 4000/3.0 loaded. By using the ASDG "Rover" networking boards along with the superlative ENLAN-DFS software from Interworks, my A4000 is connected to an A2000 (with OpalVision), an A3000 Tower (with DCTV), and a stock A2000 (used for music and sound). I can run LightRave on any of the four systems by accessing the network. You could run ParNet and run LightRave on a connected system, but I dislike tying up parallel ports, and also enjoy the other attributes and options that the ENLAN-DFS software provides. Now here's a real kicker. There are more A1200s out there than A4000s, right? The A1200 is also an AGA machine, right? But nobody that owns an A1200 can run LightWave, right? Wrong! Networking and the LightRave software and dongle will allow you to run LightWave on an A1200, and get AGA or other display mode renderings in the process. You can connect the A1200 with a ParNet cabling option, or better yet, use the new PCMCIA Ethernet adapter from Interworks to run the full ENLAN-DFS software. Owners who run the older Toaster 2.0 board and the new 3.0 software (those who upgraded before NewTek cracked down on their upgrade offer) can tie the A1200 to their A2000 Toaster to run LightWave 3.0. Those who missed the upgrade offer, or who traded up to the full A4000 Toaster, must have an A4000 Toaster in place. The Toaster doesn't render to PAL configurations, but with the addition of the LightRave bundle—Voilà!—you have an operational PAL LightWave system. This opens the European market to LightWave users.

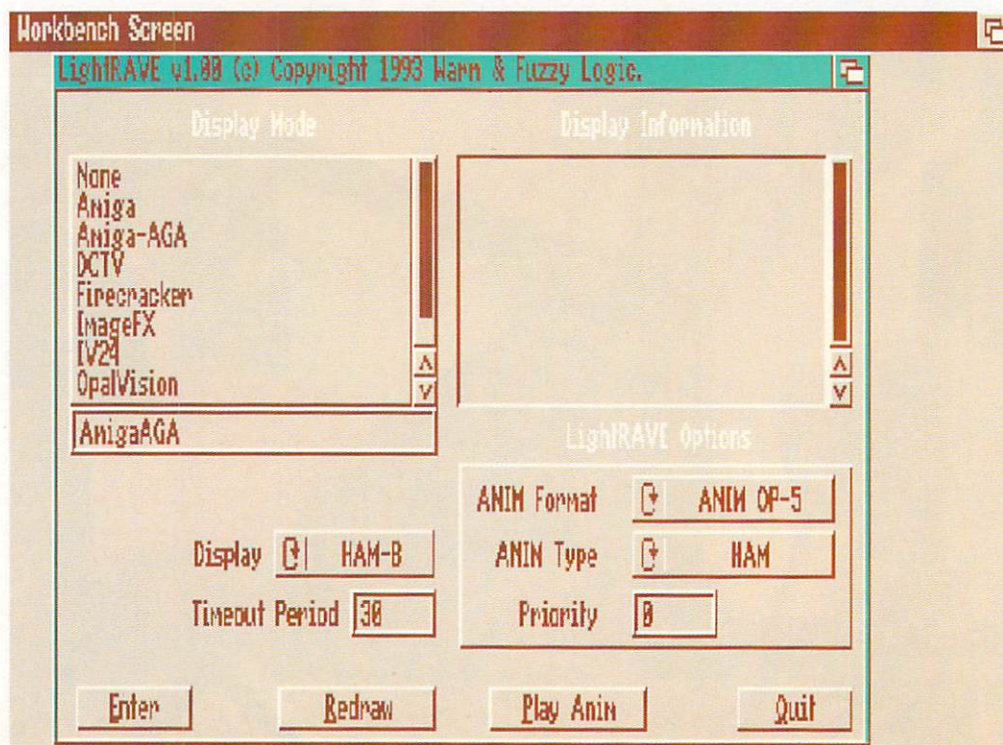
## The Negative Side

Piracy. It's a dirty word, and an activity that has driven many Amiga developers to the wall. NewTek has promised for a long time that they will release a new standalone software package called

*LightWave Professional*. Were this software available, LightRave might not be causing such a stir. We could assume that LightWave Professional would be designed to write to selectable display modes, and would have ANIM capabilities as well as other options (alternate display boards, for instance). But there is no word on whether and when this software will become available,

Previous page: Here is a LightWave scene rendered to the OpalVision board with LightRave running on a networked A2000.

Left: The simplicity of the LightRave interface hides its complex nature.





and there is no pressure on NewTek to market it at any point in the near future. Many users who want this capability in the here-and-now will jump in the direction of LightRave. Warm & Fuzzy is making an attempt to sell their product only to those individuals who can supply their NewTek Toaster serial numbers, but because they have no way of getting up-to-date serial number lists from NewTek themselves, there is no way to check the data. This almost invites the piracy of the LightWave 3.0 software. To protect itself and its product, even though there seems to be no love lost between NewTek and W&F, NewTek should provide the list of 3.0 registration numbers to W&F. But that's just an opinion, based upon the way that things seem to flow in a real but sometimes imperfect digital world.

#### LightRave: Conclusions

I tested LightRave on three systems, each using a separate display mode: AGA HAM8 on an Amiga 4000, OpalVision on an enhanced Amiga 2000, and DCTV on an Amiga 3000T. I also rendered some tests in standard Amiga 16-color Hi-Res on the

A2000. All of my Amigas are networked using the ENLAN-DFS software from Interworks and the ASDG Rover boards. In each case the results were flawless as far as rendering single frames was concerned. As mentioned earlier, the Animation module in LightRave wasn't in operation with the version of the software that I tested, but it will be available by the time you read this article. I saved an animation in AGA HAM8 and in the Grayscale modes by saving single frames and compositing them in Digital Creations' *Brilliance*. The animation looked great, though there was some streaking in HAM8. An experiment I will attempt in the future is to save the animation in DCTV and then incorporate it in the IVS *Moviemaker* system.

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## An Interview with Michael Vunch of Warm & Fuzzy Logic

Michael Vunch has been publishing software for the PC market for a long time. In addition, he has been an Amiga artist and animator since 1986, doing graphics and art demos for musicians and video productions. He is an artist rather than a programmer.

*Mortier:* How long did it take to develop LightRave?

*MV:* Four people with about 5000 man-hours for the software, and about five months for the hardware. It took over a year to code.

*Mortier:* Some of your detractors are saying you did it by simply hacking the LightWave code.

*MV:* This is not an apt term. We ran system monitors to find out what it does. Our motivation was to develop an in-house utility, and only after we saw the time spent on it did we consider it a product for distribution.

*Mortier:* If you were in NewTek's shoes, how would you react to LightRave?

*MV:* I suppose I wouldn't be entirely pleased, but it was a market void that needed to be filled.

*Mortier:* Are there any legal repercussions with NewTek on the horizon?

*MV:* No, and I don't expect this to be the case.

*Mortier:* Will LightRave motivate anyone to pirate LightWave?

*MV:* LightWave is no more difficult to pirate than any other software. It's the collectors, not the professionals, who want to own a copy of everything. As a rule, professionals don't bother with pirated software.

*Mortier:* Should NewTek be afraid of what you've done?

*MV:* They should accept the reality of the situation for what it is and profit by releasing more copies of LightWave 3.0 on the market.

*Mortier:* What if NewTek retaliates by developing new code to interfere with LightRave's ability to function?

*MV:* We will upgrade continuously to keep up with it.

*Mortier:* Where do you see LightRave heading in the future?

*MV:* We will stay behind the product steadfastly, continuing to upgrade it while adding new features and display modes. Our product will prompt NewTek to continue its own research and development, thereby benefiting the customer.

*Mortier:* In your own words, what excites you most about the potential of LightRave?

*MV:* Number one would be the opening up of the European market to LightWave users. Equally as important are the new horizons of render-farm capabilities for all Toaster users, especially with the PCMCIA capability of the new ENLAN-DFS interfaces offered to A-1200 users by Interworks. Toaster users can now render and model on one machine, while their Toaster machine goes about its Switcher tasks. Users will be able to use 68030 A1200s to render animations at 90% to 95% the speed of an Amiga 4000. The future will be amazing!

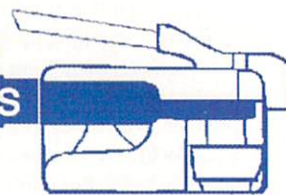
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# on line

by Rob Hays

## amiga telecommunications



Back in the Stone Age of computing, about 1970, virtually everyone who used a computer did so online with a distant mainframe. This was so because no one except large corporations or major universities could afford to own a computer. You logged on to the system from a teletype with a built-in modem that usually operated at the blistering speed of 110 bps. Naturally, these systems received their heaviest use during business hours and were mostly idle at night and on weekends. The same economic pressure that enticed fast-food restaurants to begin serving breakfast created the online services that you and I use today. If you already own a massive computer that is on 24 hours a day, and you use it only eight of those hours, why not rent time to others during the remaining 16 hours a day? GENie is one of the results of this line of thought.

The General Electric Network for Information Exchange, like other services, is divided into many different areas. On GENie these are called RoundTables and cover virtually every imaginable topic. To get directly to a specific spot within GENie, you use the MOVE command at any GENie prompt. For example, to go directly to the Amiga RoundTable, which is known as The Starship, you would

type Move 555, or, for efficiency, M555. This places you at the head menu of the RoundTable (Figure 1), where further choices can be made. These include access to the Bulletin Board area, Software Libraries, and a dozen other choices we'll examine at a later time.

The Software Libraries allow members to download files to run at home after logging off the system. If you need de-archivers, I recommend file #9571. This contains a set of de-archivers in one file. If you plan to spend any time at all on GENie, I highly recommend Amiga *Aladdin*. This is the Amiga version of a specialized terminal program for use only on GENie.

Among other things, Aladdin automates the process of logging on, checking for new messages in your favorite RoundTables, and downloading files. All of this combines to keep your online time to a minimum, with maximum results. To download Aladdin, type M1055 at any GENie prompt to go to the AmiAladdin RoundTable. Choose menu item 6 to get the latest Aladdin version, currently 1.62. Menu item 7 will get you the full manual, and item 8 will get the Quickstart manual. Be warned that Aladdin is a large (approximately 250K) and complex program. The Quickstart manual may get you up and running, but you will need to study the full manual

to get the most from the program.

You will notice that the file name extension is not one of the standard compression extensions mentioned in the last article. The extensions .run, .exe, and .pak designate self-extracting archives. No external program is required to decompress these. Merely type the filename with extension in a Shell or CLI, and the files will unpack automatically.

```

TeleTerm/genie8-18-93
Welcome R.HAYSS
Last visit at: 20:40 on: 930818

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-* Amigans Invade GENie Games!!
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-* Last Week's News on Menu #18
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-* Tonight on Conference:
  East HelpDesk    9PM EDT Rm 4
  West HelpDesk    9PM PDT Rm 4
  AmiGames!       18PM EDT Rm 6

How! This Week's Conferences!! How!
~~~~~
Wed: Accursed Toys - Tonight!
Thu: Helm Authoring System
Fri: Brilliance w/ Artist JIM SACHS!
Sat: Can YOU Beat the Amiga Hangman?
Sun: Commodore Insiders TELL ALL!
Mon: Internet Q&As with Andy
      -*-
* August ViewPort Arrives! Menu 9 *

P 555??

Genie                               AMIGA                               Page 555
*StarShip* Amiga RoundTable

1.[!]Amiga Bulletin Board          2.[!]Amiga Real-Time Conference
3.[!]Amiga Software Libraries      4.[!]About the *StarShip* RoundTable
5.[!]StarShip* Calendar (930804)   6.[!]StarShip* Crew Roster
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P 555?6
--- More (33%) ---

```

Left: Figure 1.

Opposite Top: Figure 2.

Opposite Bottom: Figure 3.

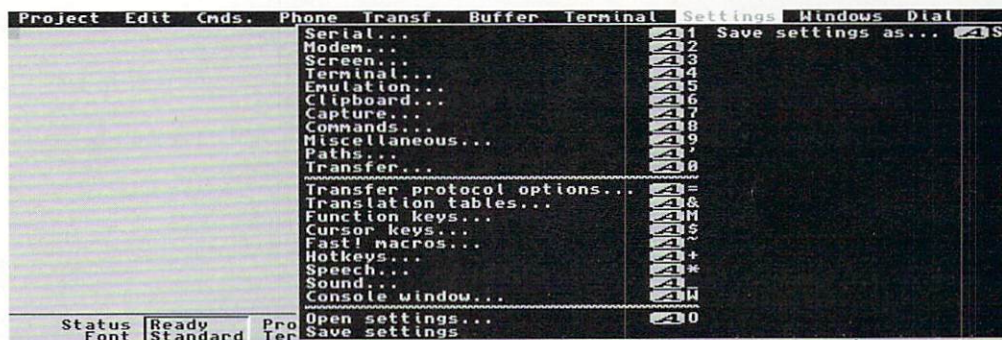
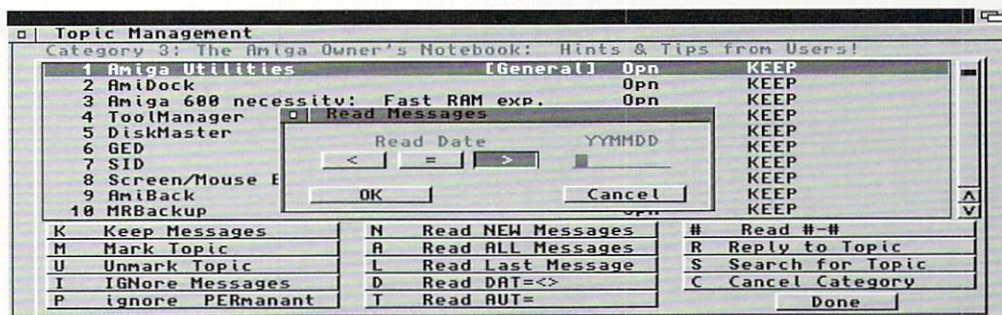


# This month: A profile of GENie's Amiga services

When you run Aladdin for the first time after configuring it for your modem, your user ID, and password, you point-and-click on the names of RoundTables you are interested in. Then select the topics within those RoundTables, and tell Aladdin whether you want to read some or all of the available messages (Figure 2). After setting it all up, one menu selection will handle your entire GENie session, from logon to logoff. With its built-in scripting function, Aladdin will take care of your online duties late at night, when most other users are in bed and the system demand is lowest. One of the best things about Aladdin is that it is free after you download it. And the author, Tim Purves, supplies support in the Aladdin RoundTable if you have any problems. Aladdin is very disk-intensive, and while it is possible to use it on a single floppy system, it and you will be happier if you have at least a second floppy drive. A hard disk is even better. Aladdin requires Workbench 1.2 or higher.

If you need a full-featured, general-purpose terminal program, take a look at *Term*, from Olaf Barthel (Figure 3). *Term* is currently at version 3.4, and has all of the bells and whistles a good terminal program should have. There are two versions of the program itself, file #20498 for users with 68030 processors, or file #20497 for any other processor. You will also need file #20262, the documentation files, and file #20264, which has libraries needed by *Term*. You may also need file #20263, which has special fonts, and file #20265, which contains translation tables. The best thing to do is download the first three files, either of the main program files, docs, and libraries, then read the docs to determine if you need the fonts or translation tables. Finally, file #20266 has some sample ARexx scripts. *Term* requires Workbench 2.04 or higher.

We will look at both of these in more detail later, but for now, how do you find GENie? Set your software to 8 data bits, no parity, and 1 stop bit. Use half duplex or local echo, and either 300, 1200, or 2400 baud. Dial 1-800-638-8369 (in Canada call 1-800-387-8330).



When you see the word CONNECT on your screen, type "HHH" (without the quotes), and press return. GENie will respond with the prompt "U#=", to which you respond by typing "AMIGA" and press return.

What does it all cost? Effective July 1, 1993, a subscription is \$8.95 per month in the U.S., \$10.95 in Canada. This includes up to four hours of non-prime time usage at any baud rate less than 9600. Using 9600 bps costs an additional \$6 per hour, \$8 Canadian. Weekends and announced holidays are non-prime. Prime time costs an additional \$9.50 per hour, \$12 in Canada. Standard non-prime connect charges are \$3 per hour and \$4 per hour in Canada. Prime time is 8 a.m. to 6 p.m. local time weekdays. Charges are billed to the nearest hundredth of an hour. You will need a major credit card to sign up, or you can have charges deducted from your checking account.

That's all for now. If you'd like to send me e-mail on GENie, I'm known as R.Hays5. Next time we'll look at some odd punctuation. See you online!

•AC•

Please Write to:  
Rob Hays  
c/o Amazing Computing  
P.O. Box 2140  
Fall River, MA 02722-2140



# Making an ADPro Front-end with HELM

by Douglas J. Nakakihara

This tutorial will show you how to create an *Art Department Pro* (ADPro) front-end to convert an AGA ANIM to a DCTV ANIM using *HELM*, from Eagle Tree Software. This is a particularly timely project with so many AGA ANIMs appearing on BBSs and not everyone having an AGA machine. (Note: the ADPro ANIM loader and saver are required.)

## Why HELM?

One reason I chose HELM over the other authoring programs is that it is very easy to create standard Amiga gadgets. I assume you have a basic understanding of HELM and can refer to its manual for further detailed explanation.

Begin by selecting New from the Book menu. Call the book ANIM2DCTV and click OK. Answer No to the Copy-current-form requester.

We'll create all of the objects first and assign scripts to them later. Select Display from the Author menu. Choose NTSC:High Res from the display list and set colors to eight. Click OK.

Open the Draw Tools and Layers windows using the Tools menu. Add the objects listed below—only the parameters that deviate from the default settings are listed. You can create them without regard to location and size and later modify their settings. To display an object's information requester, double-click on it. (Hint: the cut and paste functions can speed things up.)

**BUTTON 1:** General: (Left/Width/Top/Height) 7/44/22/16, Name=FReq, Cannot move. Color: Gray(4). (Gray is the 4th color from the left.)

**BUTTON 2:** General: 7/143/62/16, Name=Run ADPro, Cannot move. Color: Gray(4).

**BUTTON 3:** General: 162/143/62/16, Name=Do It, Cannot move. Color: Gray(4).

**BUTTON 4:** General: 317/143/62/16, Name=Quit, Cannot move. Color: Gray(4).

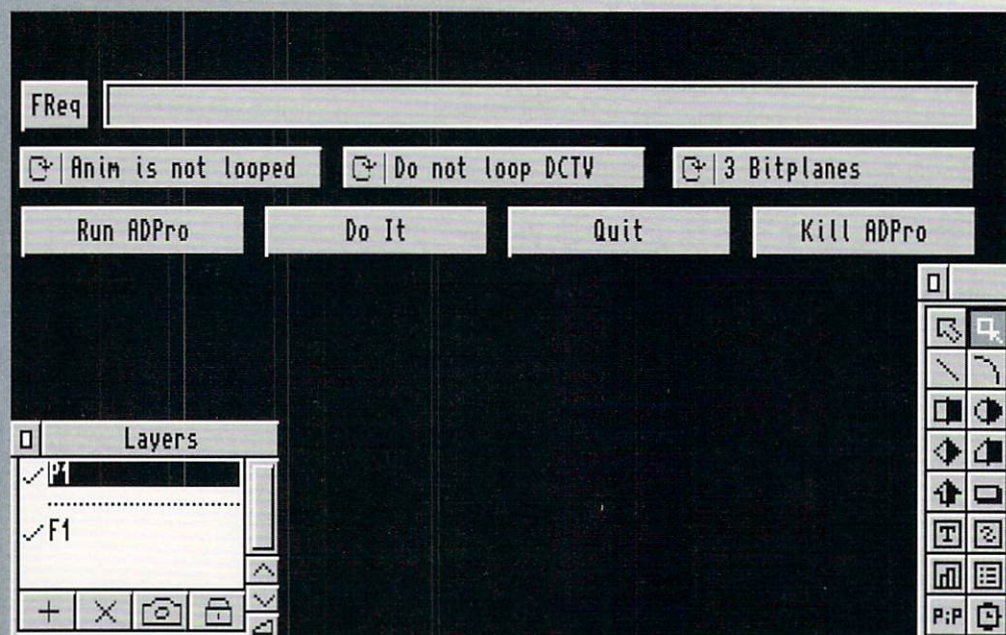
**BUTTON 5:** General: 473/143/62/16, Name=Kill ADPro, Cannot move. Color: Gray(4).

**TEXTFIELD 1:** General: 59/558/22/16, Name=Animfile, Cannot move. Options: One Line Only. Color: Gray(4). Border: Frame, Thick=2

**SELECTOR 1:** General: 0/205/40/25, Name=Animloop, Cannot move. Type: Cycle. Color: Transparent.

**SELECTOR 2:** General: 206/205/40/25, Name=DCTVloop, Cannot move. Type: Cycle. Color: Transparent.

**SELECTOR 3:** General: 416/205/40/25, Name=Bitplanes, Cannot move. Type: Cycle. Color: Transparent.



## Cycle Gadgets

Double click the selector named Animloop. Select the Type button. Click and hold the mouse pointer over the word "Items" and select New from the pop-up menu. Change the text "ABC" to "Anim is not looped." (Don't type the quotes.) Add an "Anim is looped" entry next. Exit the requester.



# Build a custom interface to control specific ADPro functions

In similar fashion, add "Do not loop DCTV" and "Loop DCTV" to the DCTVloop selector. The Bitplanes selector should have "3 Bitplanes" and "4 Bitplanes" entries.

## Layers

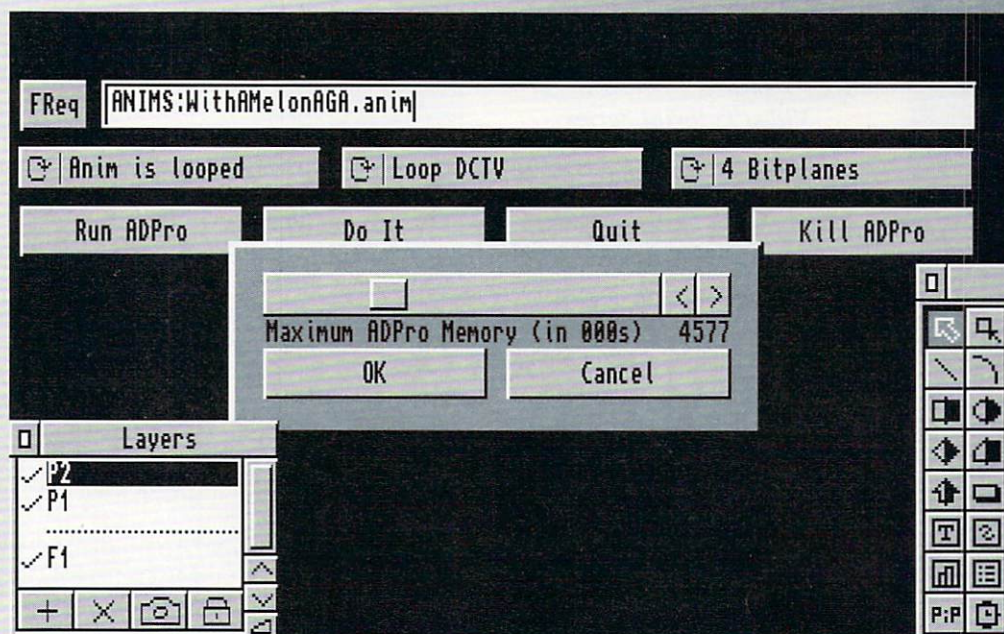
Next, we want a requester to pop up with a slider gadget when the Run ADPro button is clicked. The slider will allow the user to specify how much memory ADPro should use.

By placing all of the objects on a separate layer, we can make them appear and disappear by changing the layer's visibility. Click the + on the Layers window. The new layer will be assigned the name ABC. Select the text "ABC" and change it to "P2" (no quotes). Make sure the P2 layer is highlighted and checked in the Layers window. Objects are always added to the highlighted layer. Now, add the following objects:

**BUTTON 6** (Create first!): General: 140/341/73/62, Name=<blank>, Cannot move. Color: Blue(3). Border: Thick=2. **BUTTON 7**: General: 162/143/107/16, Name=OK, Cannot move. Color: Gray(4) **BUTTON 8**: General: 317/143/107/16, Name=Cancel, Cannot move. Color: Gray(4) **SELECTOR 4**: General: 156/310/80/37, Name=ADProMem, Cannot move. Type: Slider, Readout, Arrows, Label=Maximum ADPro Memory (in 000s). Color: Blue(3), Transparent.

## Variables & Containers

Containers are similar to variables in other programming languages, but they are much more versatile. For example, if container holds a number, HELM determines on the fly if it should be used as a text string or value—no conversion required. (There are other differences, beyond the scope of this article.) Note: containers are local by default, that is, they have no meaning outside the script in which they are used, unless declared global.



## Concatenating

Concatenating is the process of linking text strings together. It is like adding numbers together, except that you are using strings. HELM uses the ampersand character (&) as the concatenate symbol. This can be used with any combination of strings and containers. For example, the line "My" & Text1 would be the same as "My Amiga," if the container Text1 held the string "Amiga." Two special string codes should be noted. The code \n in a string means new line (i.e., a carriage return) and \" is used in place of a quote within a string.


The listing that accompanies this article details the scripts for all of the objects. The scripts are fully annotated, so I won't discuss every one in detail. I'll just highlight the important issues. HELM uses the C programming language convention for comments where everything between /\* and \*/ is ignored.

## File Requester

Now let's give the gadgets something to do. Hold the control key down and double click on the object named FReq. (Note: Make sure you are selecting the correct objects, as some bounding boxes overlap each other.) This brings up the script window for this object. The default action is SelectUp. In other words, this script will execute when the object is selected and the mouse button is released over this object. The script for this object basically asks the user to identify an ANIM file and then puts the filename into the Animfile textfield object.

If an ANIM file has been selected previously, the requester uses the same directory; otherwise it uses RAM:.







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## Run ADPro Button

The Run ADPro script is a little tricky. First it checks to see if ADPro is already running by looking for the ADPro AREXX port. If ADPro is not running, the special container Returnmessage will hold the value 10. By concatenating multiple program lines together, an entire AREXX script can be sent out using a single HELM command. Separate lines have been used in the HELM script for clarity; it is not required.

```
AREXX "\X=show('P','ADPro')\n" &
"if X=0 then exit 10\n\" waitmessage
```

is equivalent to executing the following AREXX script:

```
X=show('P','ADPro')
if X=0 then exit 10
```

Because both HELM and AREXX require quotes around the entire script, things can get a little confusing. You'll always need at least a "\" at the beginning and a \" at the end of every AREXX script that you execute this way. The Waitmessage switch tells HELM to store any returned information in the Returnmessage container. (Support for in-line AREXX commands will be coming in a future HELM upgrade; I can't wait!)

## Revealing Layers

Before the hidden layer is made visible, the script sets the maximum value for the slider object to the total amount of free memory (in thousands). Also, the starting point of the slider is set to half of that.

Since drawing objects can be less than instantaneous, it is a good idea to lock the display before executing any commands that will change the screen. Then you can instantly update the screen by unlocking it. This makes even complex combinations of objects appear to pop onto the screen. Notice that we also lock layer P1. This denies access to any objects on that layer.

## OK, Run ADPro

The OK button on the Run ADPro layer executes ADPro using its MAXMEM switch. To accomplish this, we concatenate strings to come up with the proper command. Because memory is listed in thousands on the slider gadget, the value of the slider gadget must be multiplied by 1000. The value is saved in the ADProMem container.

After the command to run ADPro is issued, layer P2 is made invisible again and layer P1 is unlocked.

## Do It

Basically, the Do It script builds an AREXX script with certain parts that vary depending on how some of the objects are set. Because the script may vary, we cannot directly execute the commands as we did previously. The AREXX script must be built line by line in a container. When completed, the container can be saved as a file and executed as an AREXX script.

For an example of how the script can vary, notice that the AREXX script includes only the line "numframes = numframes - 2" if the Animloop cycle gadget has a value of 1, which indicates that the ANIM file is a looped ANIM.

Looped ANIMs have a duplicate copy of the first and second frames appended to the end of the file. By comparison, 4bitplane DCTV ANIMs have greater detail, but are larger and play slower than 3bitplane ones.

It is important that the first line in building the script uses the Into keyword and not the After keyword. The Into keyword replaces anything already in the Sendrx container. Subsequent lines are appended to existing data in the container by using the After keyword.

When you're done, click on the checkmark next to P2 in the Layers window to make this layer invisible. Then put HELM into the browse mode and see if ANIM2DCTV works. If not, examine the file anim2dctv.rexx saved in RAM:. This may give you a clue as to what went wrong. Also, double check all object parameters.

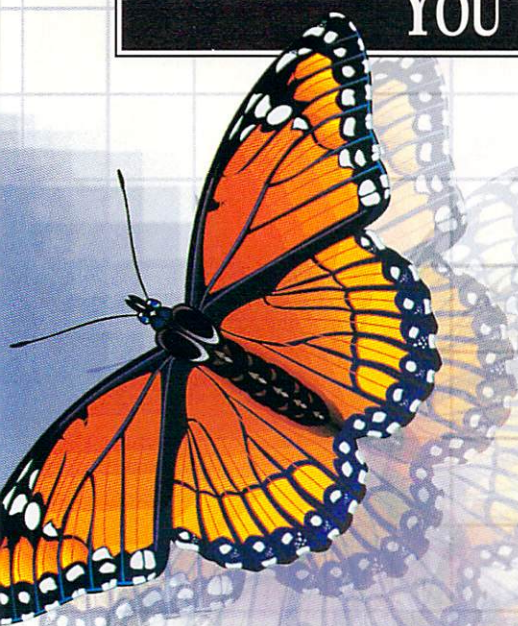
If you've understood all of this, you should be able to add an ANIM-view feature using your favorite ANIM viewer. You could also add the option to send the DCTV ANIM to a selectable directory. Try changing the cycle gadgets to radio boxes or adding a backdrop. With enough practice, you'll be able to create commercial-looking custom interfaces for any AREXX-aware program. This only scratches the surface of what HELM can do.

•AC•

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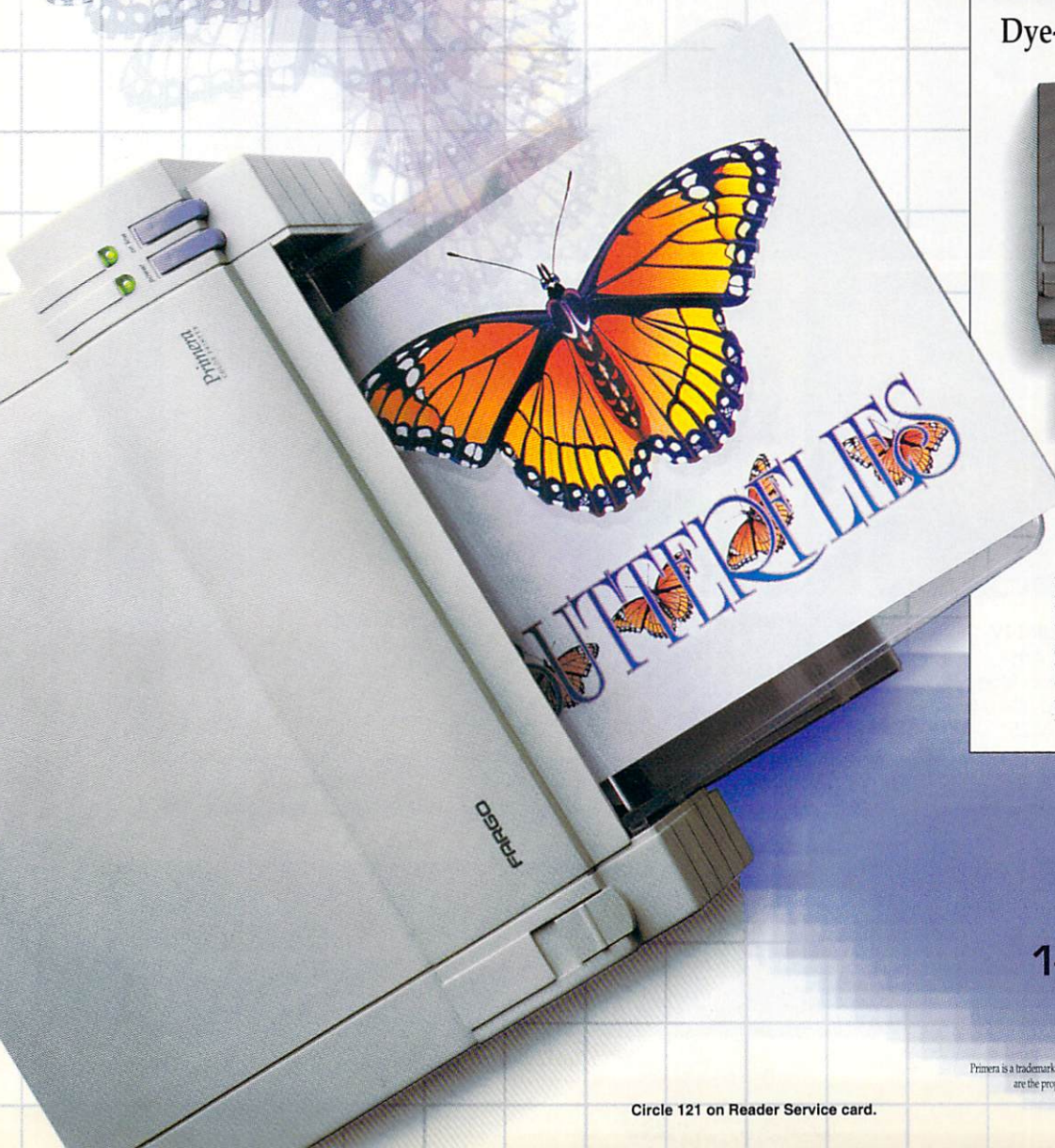


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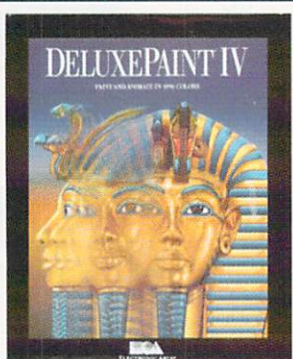
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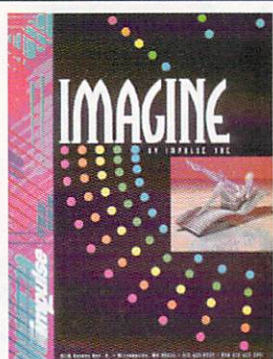
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## Painting / Animation



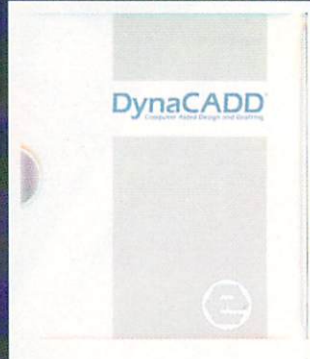
**DeluxePaint IV**  
Electronic Arts  
1450 Fashion Island Blvd.  
San Mateo, CA 94404  
(800) 245-4525

## 3-D



**Imagine**  
Impulse, Inc.  
8416 Xerxes Ave. North  
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## CAD



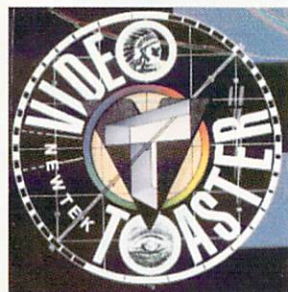
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# READER'S CHOICE AWARDS



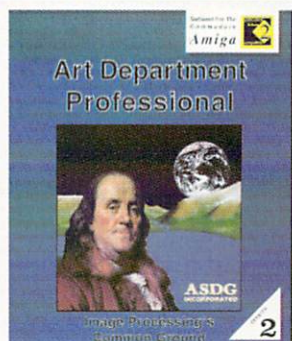
# and the winners are...

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## Image Processing



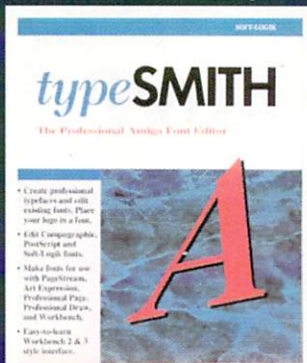
**Art Department Pro**  
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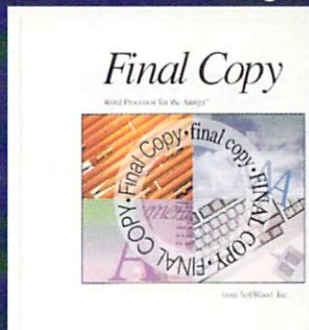
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## DTP Accessory



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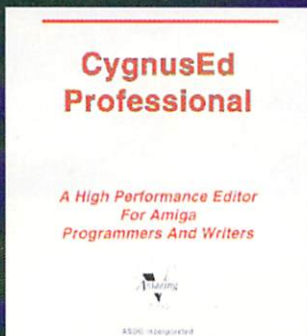
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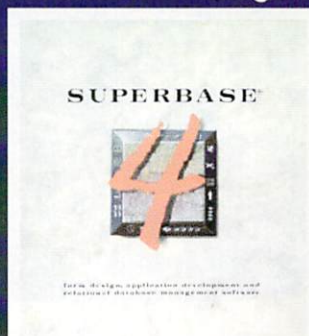
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Scala, Inc.  
12110 Sunset Hills Dr. Ste 100  
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## Text Editor



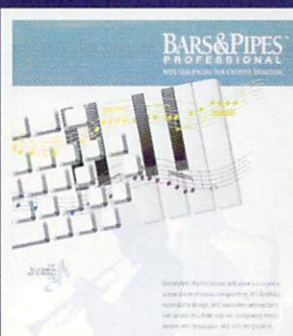
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3



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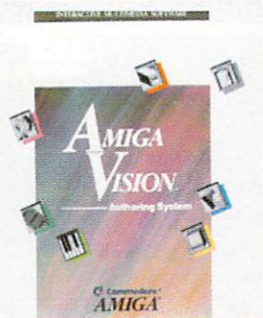
## Education



### Distant Suns

Virtual Reality Labs., Inc.  
2341 Ganador Court  
San Luis Obispo, CA 93401  
(800) 829-VRLI

## Authoring System



### AmigaVision

Commodore Business  
Machines  
1200 Wilson Dr.  
West Chester, PA 19380  
(215) 431-9100

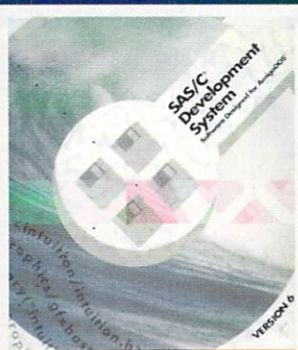
## Utility



### Quarterback Tools Deluxe

New Horizons Software, Inc.  
P.O. Box 164260  
Austin, TX 78746  
(512) 328-6650

## Language



### SAS/C Development System

SAS Institute, Inc.  
SAS Campus Drive  
Cary, NC 27513  
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## Hard Drive Controller



### Series II

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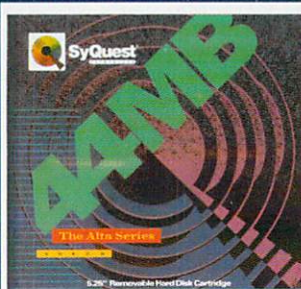
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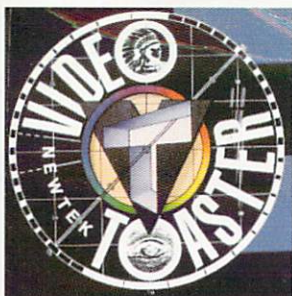


### A-Max II Plus

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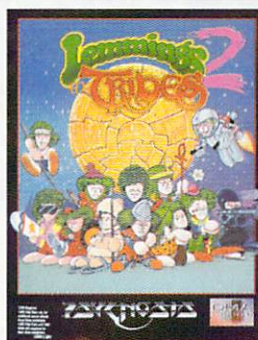


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(800) 922-8911

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Hewlett-Packard Co.  
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## Manufacturer/

### Technical Support Great Valley Products

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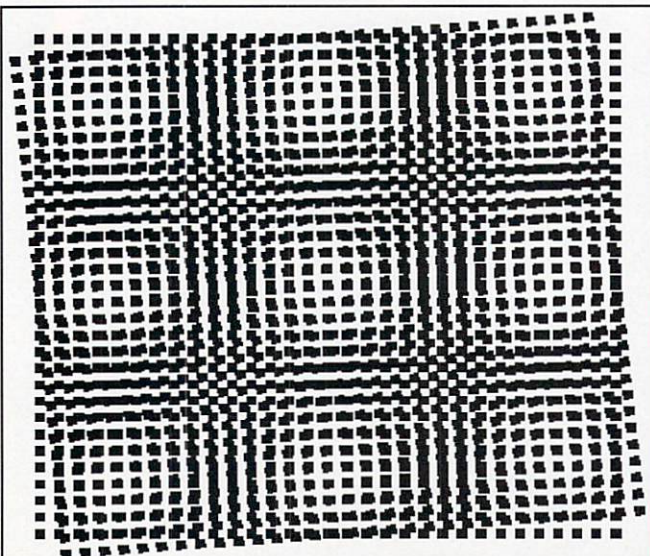
# Working with Color

## in Desktop Publishing

by Dan Weiss

One of the most interesting aspects of publishing is working with color. It is also one of the most troublesome. Last month we looked at mechanical, known also as spot color, printing. This month we will look at its more complex sibling, process color printing. By using process color printing we can easily recreate images that are rich in colors and photographic in quality. While process work requires much more precision, it is still within the reach of desktop publishers.

Examining  
the differences  
between spot color  
and process color printing  
and the benefits of using  
process colors.



### Process Colors

The first thing to learn about process color printing is CMYK. CMYK are the letters that represent the colors used in process color printing. "C" is for Cyan, a light blue color. "M" is for magenta, a reddish purple color. "Y" is for yellow. "K" is for "Key." The key color is used to mark areas that will be changed. The key color is always black. The result is that CMYK is always thought to mean Cyan-Magenta-Yellow-Black.

In computers we are used to RGB (Red-Green-Blue) for specifying colors. Why then do we need CMYK, and why do we need four colors instead of three? The difference in colors has to do with how light is perceived by the human eye. In the case of the computer monitor, the color you see is being created by the monitor and beamed to your eye. Even if all the lights are out, you can see the monitor fine. This is known as transmitted light. As you learned in high school, the combination of all light is white light. If you combine red, green and blue light you get white light. By controlling the amount of the three colors of light displayed, the computer monitor can display thousands, even millions of different colors.

With the printed page it's a little different. If you mixed all the colors of paint you had as a kid, you ended up with mud instead of white. Why?—because you are working with reflected light. With the printed page, every color you see is the result of light hitting the page and reflecting into your eye. If there is less light to bounce off the page as in a dark room, then the image will appear darker. When light hits a spot of green on a page all the colors of light except the green light are absorbed and the green is reflected to our

Figure 1: A moiré pattern can result if the color plates are not lined up properly.



# Secrets behind four-color process printing.

eyes. Imagine now a spot that combines many colors. Each color will absorb most of the light and reflect its color. With so many colors, eventually all colors will be absorbed and the spot will appear dark.

OK, so we know why mixing all the colors does not work on paper, but why CMYK? Another way to look at "reflected" colors are as "subtractive" colors. Each color subtracts a bit more from the white of the page, whereas RGB are "additive" colors in that they add together to make white. Since subtractive is the opposite of additive, CMYK are the opposites of RGB. Cyan is the opposite of red, magenta the opposite of green, and yellow the opposite of blue.

To get green on the page, you would use cyan and yellow. Since cyan is the opposite of red, and there is no red in green, there must be 100% cyan in green. The same logic applies to yellow. It would follow that to get black on the page you would have cyan, magenta, and yellow all on the page at once, since this is the opposite of no red, green, or blue. The problem is that inks are not perfectly pure, and you end up with a very dark brown instead of black. To make sure that the blacks are really black, additional black ink is used. In transmitted color, there is not the need to add white.

Unlike spot color printing, you do not need to specify the CMYK inks, as they are already well specified. In order for everything to work out, the exact tints of the process inks are carefully defined and checked when printing. If there were not a standard, one printer could use one shade of cyan and another a different one. Your work would look radically different depending on who printed it. In the U.S. the standard is defined by SWOP (Specifications Web Offset Publications). In other countries the definitions are slightly different, but not by much.

## Halftones

Halftones are a solution to the problem that printers cannot print shades of color under normal circumstances. The ink in one part of the page is just as dark as in any other part. To solve the problem, dots set on a grid are used. When a darker color is needed the dots are bigger—usually to the point of touching each other. When a lighter color is required, the dots are much smaller. In both cases the number of dots is exactly the same and always laid out on the same grid. The number of lines of the grid, in effect the number of lines of dots, is known by the term "lpi" for lines per inch.

Figure 2: This sort of pattern is actually desirable because it is very regular and is not really picked up by the eye. The point is to angle the dots so that they create the maximum amount of visual interference, avoiding larger, easier to see interference like in Figure 1.

Lines per inch is the standard unit of measure for determining how detailed a printing will be. Grids with fewer lines per inch generate coarser images. To see this, compare a photo in a newspaper with one in this magazine.

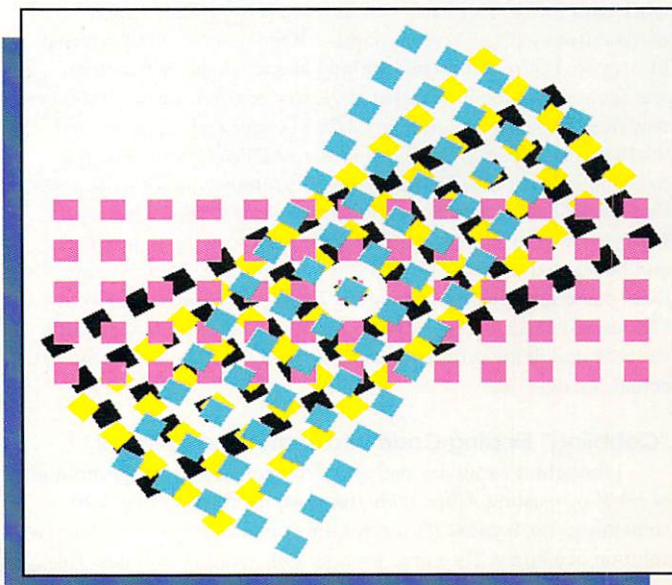
In the computer world we are used to thinking in terms of dots per inch or dpi. The dots in the computer sense are fixed in size. To print shades, the computer must simulate a halftone either by using a pattern or by creating the halftone dot out of many printer dots. Because of this a printer with 300 dpi can at best only generate around 60 lpi, and more realistically 20 lpi. Both of these resolutions are too low for serious consideration.

Instead, imagesetters, with 2540 dpi and higher resolutions are used. At 2540 dpi, up to 150 lpi could theoretically be simulated. In practice, 133 lpi, a very high-quality resolution, is the high end of an imagesetter's resolution. This kind of quality is fine for magazine work and is in wide use today. Newspapers typically use a lower resolution such as 65 lpi or 85 lpi, values that are well within the range of the imagesetter.

## Moire Patterns

The idea of using halftone dots to create shades of a color is a powerful one. What about generating shades of colors that are a combination of process colors, like green? Simply laying down a grid of yellow dots followed by a grid of cyan dots will not solve the problem since this will often result in moire patterns. To see a moire pattern in action, look at Figure 1. There are two grids of black dots shown. The first one is slightly offset from the second. This type of offset is not uncommon with color printing. The moire pattern is the

*(continued on page 58)*





# ARexx

As I was wondering what to write about this month, my Amiga artist friend, Harry O. Morris, called me. He had just bought a new graphics card for his Toaster-Firecracker-GVP-accelerated Amiga 2000, which he uses to produce fine art and book covers. Harry buys graphics cards like traditional artists buy paints and brushes. Harry said he had a new Retina board, and he'd removed his Firecracker to make room for it. Could I come over and fix his ARexx scripts in *ADPro* and *Directory Opus* to display his pictures on the new board?

## In Case You Haven't Heard

The Retina Display Board is popular because it offers emulation of the Workbench in S-VGA high resolution, mimics the AGA chipset (for those not having an A4000 or an A1200), and it displays beautiful, 24-bit pictures, all on one multi-sync monitor! A desk is cluttered, and expensive, when you must accommodate two monitors just to see 24-bit images. The Amiga has needed 24-bit capability on a multi-sync monitor for a long time; after all, PCs have had S-VGA for ages. And if you can't use the Workbench in at least 1024 x 768 non-interlaced mode for DTP, then where is our graphics advantage? The Retina board is one of a series of German-made graphics boards just becoming popular here, and it's a reasonably priced solution for those who don't have an AGA machine. In many respects, it's better than the AGA chip displays. MacroSystemsUS, 17019 Smugglers Cove, Mt. Clemens, MI 48038, (313) 263-0095, markets the Retina in the U.S.

Harry had been using my ShowIFF24.rexx program, which was the subject of an earlier column (V7.10), to display pictures on the Firecracker24 card, and asked me to convert these ARexx scripts to work with the Retina board. You may recall my earlier scripts worked from within Directory Opus (DOPus) to take your selected files, open ADPro if it wasn't running already, load each picture, and save each to the Firecracker24 display board. It seems that every new display device includes an ADPro Loader and/or Saver, and the Retina is no exception. It includes an ADPro Loader, which is really an ARexx program in disguise. It prompts you for a file, takes that file, loads it into ADPro, and then saves it to the Retina board. Harry wanted to load his pictures from Directory Opus, however, and he wanted to start ADPro if it wasn't running. I quickly saw that I could take the front end of my earlier program, to run from DOPus and check to see if ADPro is running; and combine it with the back end of the program that came with the Retina to do the actual saving.

## "Cobbling" Existing Code into Something Different

I thought it would be instructive to demonstrate this technique of cobbling existing ARexx code from two different sources into something else, because it's a great time saver when you need a new solution in a hurry. The entire process took about 10 minutes. This

technique demonstrates how, once you are able to read ARexx programs, you then have the power to combine bits and pieces of existing code into exactly what you want. You really don't have to be a programmer to do this! It's more akin to cutting and pasting paragraphs of text than it is to programming, although you have to be a lot more careful not to introduce typos or extraneous things into your work. Along the way, Harry, who is not a programmer, uncovered a bug in the script supplied with the Retina board and I corrected it. We were testing the completed script with different kinds of images. We will discuss a few of the techniques of debugging at the end of the article. The Retina software has undergone several upgrades since Harry bought his, and our bug will have been fixed, but we'll describe our process anyway for learning purposes. If you have an early version of Retina with no manual or an inadequate one, send them \$20 for the latest upgrade, including manuals on the board and the paint program.

If you follow our example exactly, you will come up with a 24-bit picture viewer that displays via DOPus and ADPro to the Retina board; and if you follow the reasoning process as well, you might find some inspiration for new combinations taken from your own library of ARexx programs. By lifting out a program "object" from one program and inserting it into another, we made a new utility in a few minutes. I find that I have opportunity to use this technique often. If you cultivate the habit of programming modules with more structure and less linear logic, you will be able to use more or less standalone bits and pieces from your earlier work combined in different ways. The technique of using external functions to do cut-and-dried things, such as checking to see if ADPro is running, is one example of this. You need never change that code once it works.

## A Look at the Listings

Listing 1 is the original "Loader" called "\_LoadNSaveRT" supplied with the Retina board. This program is itself adapted from a similar ADPro loader module programmed at ASDG, underscoring what we mean by adapting and modifying existing code. Listing 2 is my original ShowIFF24.rexx program. Listing 3 is the result of combining the two and fixing the small bug. Listing 4 is the external function included in ADPro as FredFunctions:GetLoader. Listing 5 is the FredFunctions:GetSaver. Note that the modularity of these



# An ARexx Viewer for the Retina Display Board

by Merrill Callaway

scripts lets us just forget them because they work. We never modified either of these external functions. We listed them only so you can see how everything works. Let's look at the original "Loader" written in ARexx. Basically, it Addresses "ADPro," the case-sensitive port name, and proceeds to record the "environment" of the "old" loader and "old" saver in order to replace them at the end of the program or in case something fails. The "NL" token is a "new line" character, assigned to the hexadecimal value of a line feed. It's used in the displaying of error information as necessary. Next, the program calls the external functions "GetLoader" and "GetSaver" located in the FredFunctions: assigned directory. These lines simply pass the arguments "UNIVERSAL" to the GetLoader program; and "RETINA" to the GetSaver program. These in turn set up ADPro's Loader and Saver formats appropriately and return the proper codes for success or failure.

Next, after putting the ADPro screen in front, the program uses the ADPro GETFILE command to open a requester from which to choose the file. If the command fails, the "environment" is restored and the program exits with a return code of 10. Note that a return code RC of 0 indicates "success." This special token is useful for measuring success or failure and making the program branch accordingly. A non-zero RC usually reveals the level of error severity. Two more tasks are necessary before the picture file is actually saved to the Retina board. First, poll the ImageType to determine what are called "Save Options," S\_Opts in ADPro jargon. There are three of them: "RAW," "IMAGE," and "GRAY." This is where the program had a bug. Its logic incorrectly assumes that if we don't have "rendered" data, we save in "RAW" format. But the actual Retina Saver window as used manually has three save-type options: 24-bit, 8-bit, and Image (Rendered) data. When Harry found that an 8-bit gray scale image wouldn't work in the ARexx program, I guessed that "GRAY" was the proper S\_Opt, and it turned out I was right! We will fix this bug in the final program. If you plan on using this version on its own, substitute the SELECT block in Listing 3 for this IF-THEN-ELSE block. Finally, the program Saves the data with the appropriate S\_Opts attached, and exits after restoring the environment. Note that there are two control-type S\_Opts, "DELAY n," and "CLOSE" that show the picture for n seconds and close the picture, respectively. One glitch we found: from ARexx you need to use explicit control. You cannot close the picture with a Right Mouse Button RMB click during an ARexx program showing the picture. If you eliminate the DELAY 10 CLOSE part, the picture will not go away. You can make it disappear by flipping screens with Left-Amiga-M, but this is messy. The Retina has more than a few idiosyncracies, but its display is gorgeous.

Note the way ARexx lets you combine what are called expressions on one line. The final SAVE command includes literals as well as variables, called tokens in ARexx jargon. The tokens are evaluated on the fly, always from left to right. You simply mix up the literals 'in quotes' with the token names, which are not in

quotes. Note also the use of the concatenation operator "||," which puts two things right next to each other without spaces. You can even put in a non-printing character into an expression as in the case of the hex rendering of the New Line character in the error messages.

## Keep What We Want; Throw Out the Rest

We won't go into detail about Listing 2 as it was the subject of the earlier column. We'll just point out the parts we need and don't need. In Listing 1, we don't need the parts that prompt us to pick a file from the requester because we want to do that part from DOpus. We'll eliminate the GetFile command and all its attachments. Before we do, however, we make note of the fact that the final selected file is assigned to a token called "file" in Listing 1, and our selected file from DOpus (Listing 2) is in a token called "filename." We are careful to change the name in the final version to "filename." We start by making a backup copy of each original file, and opening a new file for the combination. We select and copy all the front end from Listing 2 that allows us to select the file from DOpus. We note that there are several lines that overlap between listings, such as OPTIONS RESULTS, ADPRO\_TO\_FRONT, etc. and we just make sure that we include only one of each. Don't forget to change the comments at the start. You may want to know what this program does, a year from now when you have 300 other programs in the REXX: directory! We will use as much of the Retina program as possible, so we use its code for setting the loading and saving options. So we really copy and paste only the very front of Listing 2 where the program finds ADPro or launches it if it's not running, down to the place where it needs to load the file. We discard the rest. At that point, we need to switch over to the \_LoadNSaveRT script from Listing 1.

## The DOpus Configuration

As far as DOpus is concerned, we configure a gadget as an ARexx Program, and put on the command line along with the name of the program, an {f} which is DOpus-speak to indicate that we want the selected path and file name to be an argument to the program. That's why the program has the PARSE ARG lines in it, to insert the file name from DOpus into the program. We additionally set "do all files" in the DOpus gadget configuration window, and then each file will display in turn for the number of seconds we set in after the DELAY S\_Opt in the ARexx program.

## The Combination

Listing 3 contains the finished script cobbled from the originals, the front of the ShowIFF24.rexx program, and the \_LoadNSaveRT script minus the GetFile command, and with duplicate instructions removed. We changed one token to "filename" from "file" and we rewrote the S\_Opts into a SELECT block to cover the omitted "GRAY" option. I also upped the time to display to 10 seconds from



the original five seconds. Now Harry can display his pictures one at a time from DOpus on his Retina board.

## Some Comments on Debugging

It is important to try a new program with all the data types and situations that will obtain under actual use. In our case, Harry could get no response when trying to display an 8-bit gray scale picture. My first move was to confirm this shortcoming with the original program in Listing 1. Always hold constant what you know to be true and try changing one thing at a time when debugging. The original program failed to display the image. I suspected that the S\_Opt was incorrect. I confirmed this by manually loading and displaying the gray image to the Retina. It saved OK. I then noticed that the screen in ADPro, which doesn't come up in ARexx, had three options to click on: Image, 24-bit, and 8-bit. We already knew that "RAW" worked for 24-bit, so I put myself in the original programmer's mind. What would I choose for an S\_Opt keyword for an 8-bit GRAY scale? "GRAY" of course! I tested this theory by actually inserting the word "GRAY" into the SAVE line. After I had confirmed that an explicit "GRAY" S\_Opt worked with this image, I wrote the replacement SELECT block to take care of the logic and assign the "savetype" token a value of "GRAY" when appropriate. I then confirmed that one of each type of image file worked OK. It is like detective work. Make one change at a time with everything else held constant.

## Listing One

```

/*
** _LoadNShowRT
**
** $VER: _LoadNShowRT 1.0.0 (27.07.93)
**
** This program can be run from ADPro's loaders list to load and then
** display the loaded image on a Retina card.
**
** This script requires at least ADPro v2.3 or MorphPlus v1.0.1 and
** the RETINA saver.
**
** Modified from _LoadNShowOV which is
** Copyright © 1993 ASDG Incorporated All Rights Reserved
**
ADDRESS "ADPro"
OPTIONS RESULTS

NL = '0A'X

LFORMAT
oldLoader = ADPRO_RESULT

SFORMAT
oldSaver = ADPRO_RESULT

CALL "FREDSCRIPTS:FREDFunctions/GetLoader" "UNIVERSAL"
IF( RESULT ~= 0 ) THEN
    EXIT 10

CALL "FREDSCRIPTS:FREDFunctions/GetSaver" "RETINA"
IF( RESULT ~= 0 ) THEN DO
    CALL "FREDSCRIPTS:FREDFunctions/GetLoader" oldloader
    EXIT 10

END

ADPRO_TO_FRONT

GETFILE "File to load"
file = ADPRO_RESULT
IF( RC ~= 0 ) THEN DO
    CALL RestoreEnv
    EXIT 10

END

LOAD file
IF( RC ~= 0 ) THEN DO
    OKAY1 "ADPro failed to load the image."
    CALL RestoreEnv
    EXIT 10

END

```

```

/*
** See what type of data is loaded in ADPro/MorphPlus.
*/

IMAGE_TYPE
ImageType = ADPRO_RESULT
IF( WORD( ImageType, 1 ) = "NONE" ) THEN DO
    ADPRO_TO_FRONT
    OKAY1 "There is currently no image" || NL ||,
        "in ADPro's buffer. An image" || NL ||,
        "is required for this operation."
    CALL RestoreEnv
    EXIT 10

END

IF( ( WORD( ImageType, 1 ) ~= "COLOR" ) & ( WORD( ImageType, 1 ) ~= "GRAY" ) )
THEN
    savetype = "IMAGE"
ELSE
    savetype = "RAW"

SAVE "XXX" savetype DELAY 5 CLOSE

IF( RC ~= 0 ) THEN DO
    OKAY1 "ADPro can't display image."
    CALL RestoreEnv
    EXIT 10

END

CALL RestoreEnv

EXIT 0

RestoreEnv:
    CALL "FREDSCRIPTS:FREDFunctions/GetLoader" oldLoader
    IF( RESULT ~= 0 ) THEN
        EXIT RESULT

    CALL "FREDSCRIPTS:FREDFunctions/GetSaver" oldSaver
    IF( RESULT ~= 0 ) THEN
        EXIT RESULT

RETURN 0

```

## Listing Two

```

/* showiff24.dopus shows an iff-24 file in ADPro */
/* when you select it in Directory Opus */

/* copy this file to Rexxc directory */

/*
** The program with the Firecracker24 called "showiff24" doesn't work
** very well. If you use the overlay mode, and try to show a file,
** everything is OK until you send "aoff" to turn off the Amiga overlay.
** The picture snaps smaller than the screen, a most annoying bug!
** This program fixes all that, provided you have ADPro. It uses ADPro
** to display iff24 files on the FC; a much better solution.
** May be run from Directory Opus by setting the gadget as "executable"
** and then in the command line: RX sys:rexxc/showiff24.dopus {fu}
** Set: output window, run asynchronously, and no filename quote.
** This allows the selected IFF 24 file to become an Argument to the
** program. It is then displayed on the FC24 after ADPro is opened.
** May also be run from the shell with the file as argument, or the
** program will prompt you. If you run it from dopus w/o specifying
** (selecting) a file, then the program prompts you to input a filename
** in the dopus output window.
** Copyright (c) 1992 Merrill Callaway all rights reserved.
*/

OPTIONS RESULTS

PARSE ARG filename

/*
** Running from a shell, then if no arg is supplied, we need
** to ask for the filename.
*/

IF filename="" THEN DO
    SAY 'Enter path/filename'
    PARSE PULL filename
    END

CALL Locate_ADPro

IF RESULT = 1 THEN CALL MAKEIMAGE filename /* Display the image? */
ELSE EXIT 20

Locate_ADPro:

```



```

IF -SHOW('P','ADPro') THEN DO
/*
** NOTE! I have lots of RAM. Fix the MAXMEM=# to your RAM prefs
** (the maximum amt of RAM you want ADPro to use (in bytes)).
*/
ADDRESS COMMAND "RUN ADPRO:ADPRO BEHIND MAXMEM=7000000"
ADDRESS COMMAND WAITFORPORT 'ADPro'
IF RC=0 THEN RETURN 1
ELSE RETURN 0
END
ELSE RETURN 1

/* Here is where we save the image to the FC Board */
MAKEIMAGE: PROCEDURE
PARSE ARG filename /* pass along the name of the file */
ADDRESS 'ADPro'
ADPRO_TO_FRONT
LFORMAT IFF
LOAD filename
/* get the image file data */
OPERATOR "DEFINE_PXL_ASPECT"
/*
** Note the placeholder periods ( . . . )
** We only want the 5th and 6th parameter.
*/
PARSE VAR ADPRO_RESULT . . . w h .

bw=w /* Board width? */

/* see if the pic width matches an FC board width */
/* and if not, put up a requester to find out */
BOARDWIDTH:
IF bw=384&bw=512&bw=768&bw=1024 THEN DO
/* if not, use 768 as a default board width */
GETNUMBER "W:384 512 768 1024" 768 384 1024
IF RC=0 THEN ADPRO_EXIT /* quit if we cancel */
bw=ADPRO_RESULT
SIGNAL BOARDWIDTH
END

SFORMAT RETINA

/* NOTE FORMAT: "SET XXX RAW" must precede what you want to do */
SAVE XXX RAW BOARD ON CLEAR
"SAVE XXX RAW B_WIDTH" bw "SET_DW" w "SET_DWY" h "SET_DOX 0 SET_DOY 0"
SET_SOX 0 SET_SOY 0
SAVE XXX RAW AMIGA OFF CENTER IMAGE

/* We don't close down ADPro in case we need to adjust something, so
** uncomment the following if you want to close adpro after displaying
** the file.
*/

ADPRO_TO_BACK
/* ADPRO_EXIT */

EXIT 0

```

## Listing Three

```

/*
** ShowonRT.rexx
**
** This program is a combination of ShowIFF24.rexx by
** Merrill Callaway Copyright ©1992 All Rights Reserved and
** $VER: _LoadNShowRT 1.0.0 (27.07.93)
** which was Modified from _LoadNShowOV which is
** Copyright ©1993 ASDG Incorporated All Rights Reserved
*/

OPTIONS RESULTS

PARSE ARG filename

/*
** Running from a shell, then if no arg is supplied, we need
** to ask for the filename.
*/

IF filename="" THEN DO
SAY 'Enter path/filename'
PARSE PULL filename
END

CALL Locate_ADPro

IF RESULT = 1 THEN CALL MAKEIMAGE filename /* Display the image? */
ELSE EXIT 20

Locate_ADPro:

```

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```

IF -SHOW('P','ADPro') THEN DO
ADDRESS COMMAND "RUN ADPRO:ADPRO BEHIND"
ADDRESS COMMAND WAITFORPORT 'ADPro'
IF RC=0 THEN RETURN 1
ELSE RETURN 0
END
ELSE RETURN 1

/* Here is where we save the image to the Retina Board */
MAKEIMAGE: PROCEDURE
PARSE ARG filename /* pass along the name of the file */

ADDRESS 'ADPro'

NL = '0A'X /* A "new line" character */

LFORMAT
oldLoader = ADPRO_RESULT

SFORMAT
oldSaver = ADPRO_RESULT

CALL "FREDSCRIPTS:FREDFunctions/GetLoader" "UNIVERSAL"
IF( RESULT == 0 ) THEN
EXIT 10

CALL "FREDSCRIPTS:FREDFunctions/GetSaver" "RETINA"
IF( RESULT == 0 ) THEN DO
CALL "FREDSCRIPTS:FREDFunctions/GetLoader" oldloader
EXIT 10
END

ADPRO_TO_FRONT

LOAD filename /* Note the change in token name here */
IF( RC == 0 ) THEN DO
OKAY1 "ADPro failed to load the image."
CALL RestoreEnv
EXIT 10
END

/*
** See what type of data is loaded in ADPro/MorphPlus.

```



```

/*
IMAGE_TYPE
ImageType = ADPRO_RESULT
IF( WORD( ImageType, 1 ) = "NONE" ) THEN DO
  ADPRO_TO_FRONT
  OKAY1 "There is currently no image" || NL ||,
    "in ADPro's buffer. An image" || NL ||,
    "is required for this operation."
  CALL RestoreEnv
  EXIT 10
END

/* Here was the bug: they failed to note that "gray" is S_OPT! */
/* We converted to a SELECT block for easier logic */
SELECT
  WHEN( WORD( ImageType, 1 ) = "COLOR" ) THEN savetype="RAW"
  WHEN( WORD( ImageType, 1 ) = "GRAY" ) THEN savetype="GRAY"
  OTHERWISE saveType = "IMAGE"
END

/* Shows the picture for 10 seconds...change number if you like */
SAVE "XXX" savetype DELAY 10 CLOSE

IF( RC ~= 0 ) THEN DO
  OKAY1 "ADPro can't display image."
  CALL RestoreEnv
  EXIT 10
END

CALL RestoreEnv

EXIT 0

RestoreEnv:
CALL "FREDSCRIPTS:FREDFunctions/GetLoader" oldLoader
IF( RESULT ~= 0 ) THEN
  EXIT RESULT

CALL "FREDSCRIPTS:FREDFunctions/GetSaver" oldSaver
IF( RESULT ~= 0 ) THEN
  EXIT RESULT

RETURN 0

```

## Listing Four

```

/*
** GetLoader
**
** $VER: GetLoader 1.0.0 (9.12.92)
**
** This script requires FRED v1.1.5 (or higher) to run. Also required is
** at least ADPro v2.0.4 or MorphPlus v1.0.1.
**
** Copyright © 1992 ASDG Incorporated All Rights Reserved
*/

ADDRESS "ADPro"
OPTIONS RESULTS

```

```

NEWLINE = '0A'X

PARSE ARG loader

retcode = 0
LFORMAT loader
IF ( RC ~= 0 ) THEN DO
  ADPRO_TO_FRONT
  OKAY1 "Cannot find the " || loader || " loader." || NEWLINE ||,
    "It must be located in your" || NEWLINE ||,
    "Loaders2 directory."
  ADPRO_TO_BACK
  retcode = 10
END
RETURN retcode

```

## Listing Five

```

/*
** GetSaver
**
** $VER: GetSaver 1.0.0 (9.12.92)
**
** This script requires FRED v1.1.5 (or higher) to run. Also required is
** at least ADPro v2.0.4 or MorphPlus v1.0.1.
**
** Copyright © 1992 ASDG Incorporated All Rights Reserved
*/

ADDRESS "ADPro"
OPTIONS RESULTS

NEWLINE = '0A'X


PARSE ARG saver

retcode = 0
SFORMAT saver
IF ( RC ~= 0 ) THEN DO
  ADPRO_TO_FRONT
  OKAY1 "Cannot find the " || saver || " saver." || NEWLINE ||,
    "It must be located in your" || NEWLINE ||,
    "Savers2 directory."
  ADPRO_TO_BACK
  retcode = 10
END
RETURN retcode

```

•AC•

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## —Color continued from page 51

annoying secondary pattern that you can see spread across the grid. The effect is exaggerated here, but in practice it makes the work appear blotchy. To solve this problem, we rotate the dots for the different colors at specific angles to avoid the formation of moire patterns.

Looking at Figure 2, you can see the CMYK grids rotated and printed on top of each other. Even at these angles, a sort of a pattern develops—that of a rosette. It is easiest to see this at the center of the four color grids. This sort of pattern is actually desirable because it is very regular and is not really picked up by the eye. The point is to angle the dots so that they create the maximum amount of visual interference, avoiding larger, easier to see interference like in Figure 1.

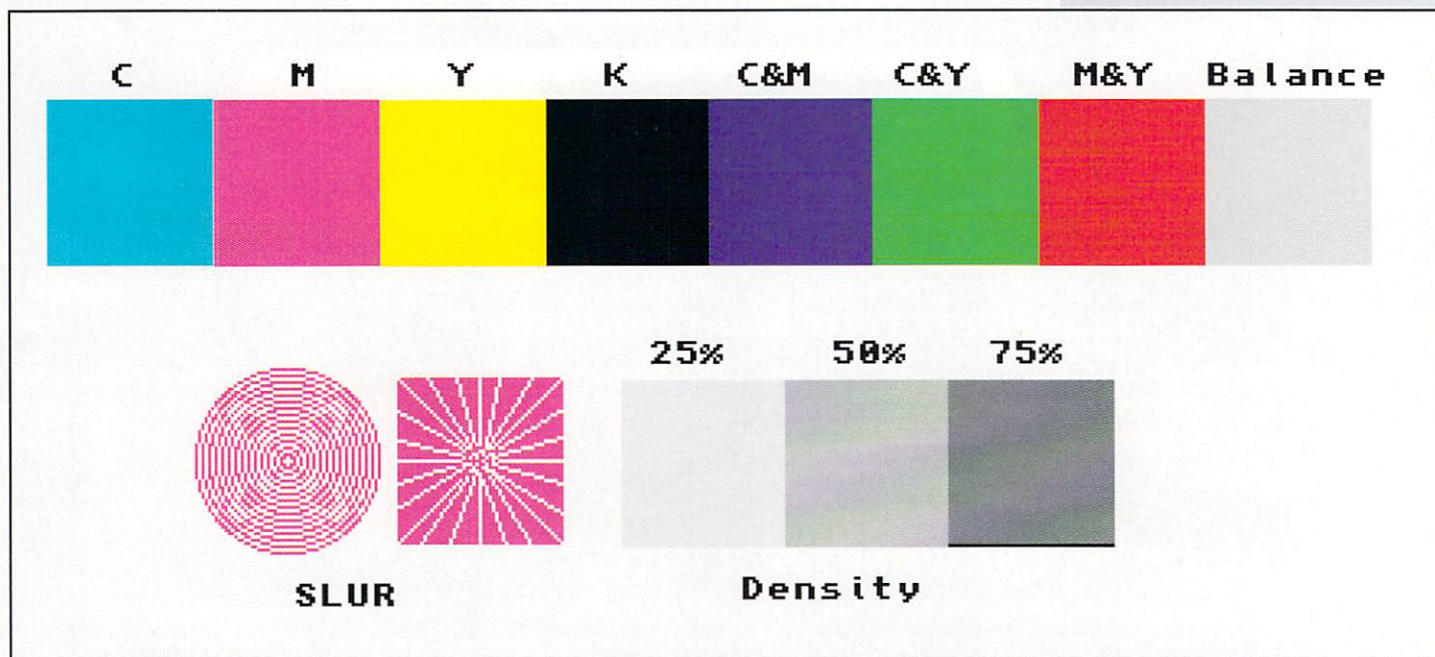
Over time, an optimal set of angles have been developed. They are 105 degrees for cyan, 90 degrees for yellow, 75 degrees for black and 45 degrees for magenta. In this age of simulated halftones however, these numbers are no longer fixed. Each PostScript imagesetter has a set of optimal angles defined for each combination of dpi and lpi. These angles are specified to four decimals in some

serious publisher, there are many things that you need to keep track of, but the actual work is about equal to spot color work.

When creating a project that you intend to print using process colors, you can be more liberal in your use of color. This is so because an unlimited number of colors can be printed at once. The only real consideration is what looks good. Because halftones are being used to create the shades, very light colors may end up looking more like freckles than what you had intended. When you go to print your negatives on the imagesetter, be sure you are using the optimal angles as discussed above. If you make sure to follow these guidelines you should be ready to take your film to the printers.

### The Proof

Too often desktop publishers think they are done when the film comes out of the imagesetter. Instead you should have a color proof made of the film. Typically, a proof is a one-time simulation of what the final job will look like, generated directly from the negatives. In the case of a "MatchPrint" (a trademark of 3M), four layers of lamination are exposed with the negatives and developed.



cases. It is very surprising but from personal experience I can assure you that those decimal points can make a noticeable difference. The lesson here is that you should make sure that you are using the optimal angles for your imagesetter. In *PageStream* you can feed these angles to the program using the special line in the PostScript printer driver. In *Professional Page* and *Art Expression*, the angles are set in the PostScript print requester.

### Color on the Desktop

At this point, about half the readers have tossed in the towel. Process color printing can be very daunting. Professionals will tell you that it is impossible from the desktop, but they are wrong. The magazine you are holding is proof of that, as are a surprising number of the magazines on the newsstand today. More and more, desktop programs are being used to design process color work. As a

The result is a perfectly registered simulation of what your job will look like. Take the time to examine the proof carefully. Are there any last minute spelling errors you missed? More importantly, is everything in the colors you expected them to be? Are there obvious moire patterns? Remember, chances are the press run will not look as good as the proof except under the best of circumstances. The color proof will have rich colors and a bright gloss finish. These colors will dull and fade a little even when printed on glossy, coated stock. If you don't like the way something looks on the proof, there is a good possibility it will only get worse.

### Color Checking

When you print your negatives you will notice some strange blocks on the edges of your negatives near the registration marks. These are color strips to test the print quality. In most cases they will



be replaced with other test strips when the press plates are made. Even in the proofing stage they can provide useful information. Figure 3 is a partial example of a test strip. The first group of boxes is used to check that the right colors are being used for each plate. A quick visual check will tell you if the person who made the proof got the negatives confused. It will also tell you if the negatives all have the correct orientation. As silly as it sounds, I have had proofs come back where both the wrong colors had been used and one of the plates had been flipped.

The last block on the first line is really used on the press only to judge if the balance among the four colors is correct. If all is well, the block should appear to be a neutral gray. The first two symbols on the second line are called slur gauges. Slur is a problem when the pressure is incorrect on the press and the printing image is being distorted. If there is a problem, the concentric targets and starburst will close up and form a solid block. This is a visual warning to the press operator that there is a problem.

The final three blocks are again for the press operator. While the job is running, the operator will pull sheets and check them to see that the densities printed on the test strip are what they claim to be. The testing is accomplished with a densitometer, a device that can examine a small part of a page and feed back what the density of ink is at that point. If the density is too low or too high, the press operator will make appropriate adjustments.

### Suggested Reading

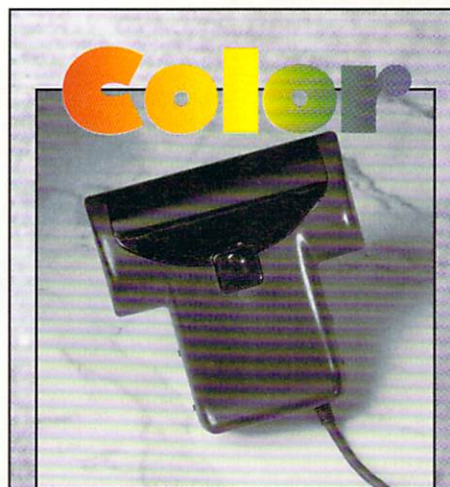
As I mentioned at the start of this series, color printing is both mysterious and frightening to most desktop publishers, but it doesn't need to be. Spot color printing is easy to do even with the most limited of equipment. Process color work is admittedly more demanding, but it is still well within the reach of many readers. To help in making the leap to color I suggest you pick up *How to Check and Correct Color Proofs* by David Bann & John Gargan, ISBN: 0-89134-350-4. This book is a treasure trove of information about color work and is loaded with great pictures and illustrations.

•AC•

Please Write to:  
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# Dirty Graphics

by Patrick Clarke

I know what you are all thinking. How low has this fine magazine gone to? Dirty pictures to sell a few magazines. Well I hate to tell you, but you are right. Kind of.

When you think of computer graphics, you think of nice, clean, sharp images of antiseptic worlds with no hint of atmosphere. Granted the works of some Amiga artists—and others—have broken that barrier, but in the big picture it still hasn't happened. That's why you don't see MTV using much 3-D work on their broadcasts. It's too clean. It's not up to the dirty, leading edge they want to portray.

Good,  
clean,  
graphic fun

First, make sure you have enough RAM for this project. It shouldn't take over 2MB, but most 3-D renders take up large quantities of RAM when using bump maps. Secondly, a copy of an animation/paint program that will work with at least 32 colors at 320 X 400, is essential. We will be using it to "enhance" the animation frames. I chose *Deluxe Paint IV* for its already legendary

capabilities. To add text to the image, I used a copy of *Zuma Fonts*, for its large bit-mapped font selection. Last, you need a copy of a

3-D program that enables the use of bump, or altitude maps. I used *Imagine*, and find it does a wonderful job. What you choose is up to you. Okay, let's go!



update

Figure 1: The simple image before it is "dirtied".



# Low-End Graphics That Turn Heads

We are going to make a header for a business logo. I recently updated a demo tape for my computer art course, and found the Terminator 2 effect of brushed aluminum intriguing, so I decided to try something similar. Instead of redoing my whole tape and rearranging all the animations, ranging from Atari, IBM, Amiga, and Silicon Graphics, I used an update, such as what NewTek used in "Revolution." But instead of the clean Terminator 2 image that NewTek used, we are going to extend ourselves a little bit.

Start up your Amiga, and load up DPaint, or its equivalent. Set your resolution at lo-res, interlace (320 X 400), and 32 colors. I can see some of you shaking your heads. Not HAM. "C'mon it's going to look horrible," you say. But I compared the quality of HAM and 32-color images, and found that time-to-quality ratio was not worth it. As a brief explanation: since the image is going to take up the entire screen, your palette will not benefit from HAM if the initial image is only 32 colors to begin with. The 32 colors at 320 X 400 were also

quite faster than HAM, especially in DPaint. Render times in Imagine were cut in half.

Once Deluxe Paint IV is loaded, bring up the palette requester. Make a spread of light to medium dark grays. Exit the palette, and

clear the screen to your medium gray. Switch to the spare screen, and access the font requester. Find the font you want. Make sure it is large, at least 100 point, or larger. This reason for this is that we want the word "update" to fill most of the screen. Now, on your spare page, type "up-

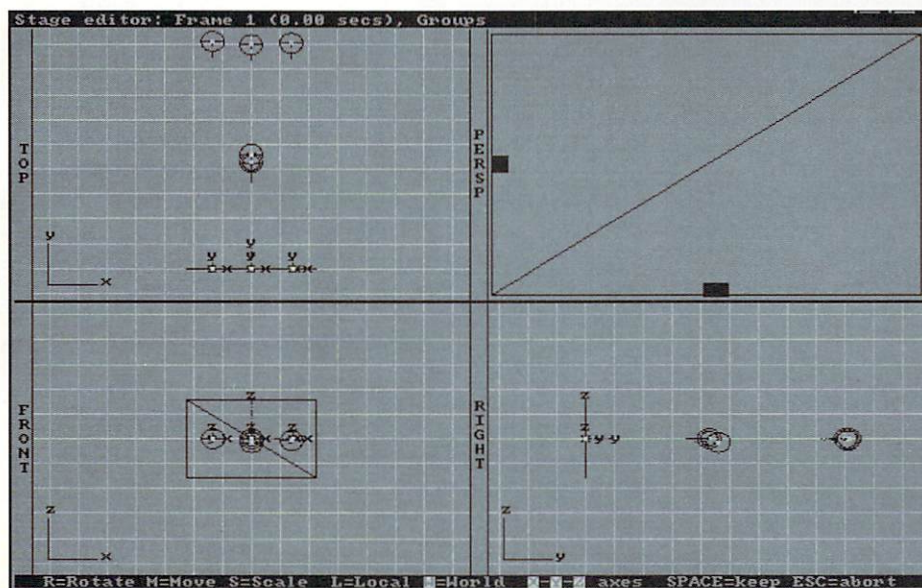
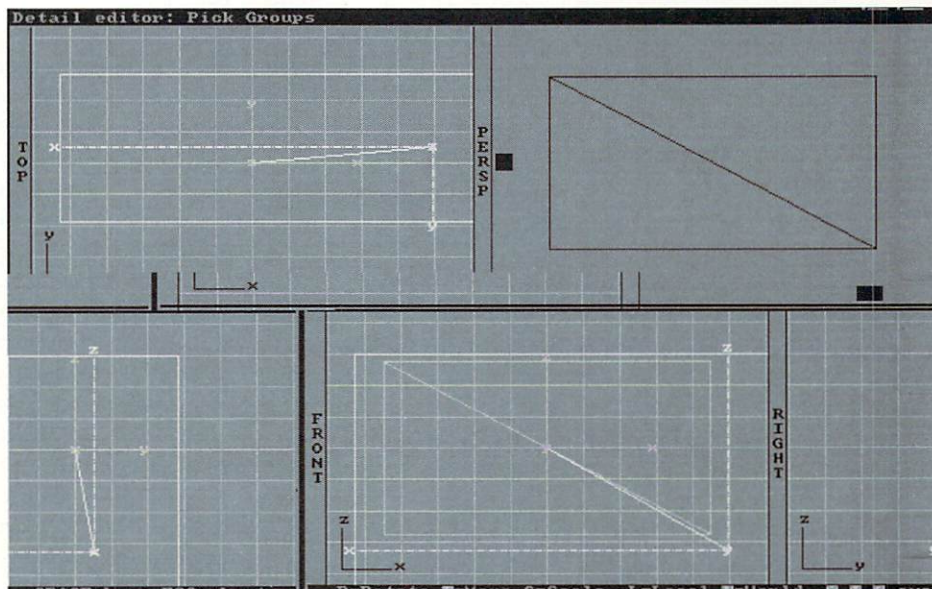


Figure 2: Above, Imagine will be used to render the final product.

Figure 3: Left, set the light sources and align your image to the grid for rendering.



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date," or the word of your choice, and make sure you are using a dark gray. I used the second darkest. Return to the main screen by pressing "j," and we will start to make the "brushed aluminum."

Pick the smallest brush, click on grid, and the straight line tool. You can "make" the aluminum one of two, or both, ways. You could go into the Range requester and make a range of all your grays, then hit F7 to enable the Cycle function, and with the line tool and grid turned on, quickly cycle lines horizontally across the screen. This

works relatively fast, and if you space them out correctly, it will work. Or you could do it by simply choosing the color you want, make a line, choose another color, and so on. I prefer the second way because it gives you more control over what your final output is going to be. What this whole process is going to do, is to define different "heights" of our flat surface, through a bump map. Essentially what a bump map does is read a gray-scale image and then assign the middle gray as a flat surface, and anything lower on the gray scale, as a "dent," and anything that is higher on the scale as a "hill." On this project, a smooth transition—very important for most bump maps—is not necessary. We want to make it look as bumpy and irregular as possible. But occasionally, a small smooth transition will be used.

Once you have that done, save it, and go to the spare screen. Pick up your word as a brush, making sure that you have the background color selected as your back color. Now that you have it as a brush, pick the color one above your text color with the left mouse button, and hit "o" on the keyboard. This outlines your text with the selected color. Keep doing this, advancing your color selection along the way, until you reach your background color. You may want to stamp this down on the spare page, or save it as a brush, so if you mess something up, you don't have to redo the text process. Switch to the main screen, and position your text in the center of the page. Stamp it down. It should look like Figure 1. When you get it right, save it, and switch to Imagine.

Once you have Imagine running, set up a project. Call it "Dirty," if you like, and a sub-project called "render." Under the rendering parameters, set the render mode to Scanline, lo-res, interlace, and your pix. files as ILBM. This is very important, because we want to edit this later in DPaint IV.

In the Detail Editor, go to Primitives, Plane, and accept the defaults, except for the horizontal and vertical sections. Set those at 1 respectively. Click on OK, and in front of you should be a Plane with two large polygons as faces. Hit F1 to pick it, and F7—this may be different for your Imagine config. file—to enter the Attributes requester.

Set the color of your wall to a light blue-green (RGB: 162, 239, 255). Set Reflectivity to 200 on the red, green, and blue. Put Dithering and Hardness at 255, and Shininess at 200. Click on Brush 1, and at the prompt, enter your IFF picture name. Choose Altitude map, and Flat X and Flat Z. Click on Edit Axes, and scale your brush axes—not just the yellow box, but the dotted line inside—a little larger than the wall, and position it a little in front of the Y-axis. (Figure 2) Hit the space bar to accept the changes, and click on Transform Axes. Click on size, and enter 100 in the Y-axis. This is the apparent "depth" of your bump map. Hit OK, and save it.

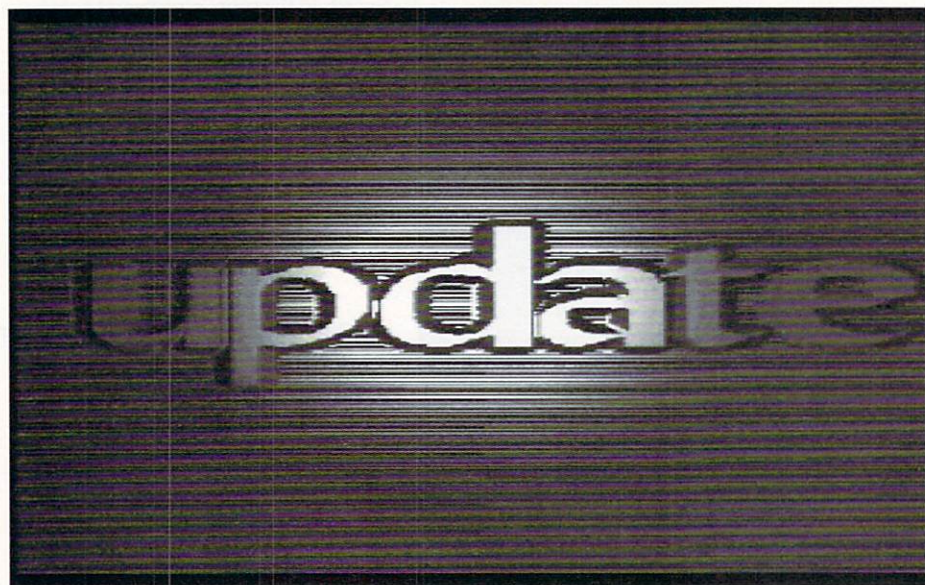


Figure 4: Interesting effects can be achieved through experimentation. This is the result of "dirtying" the original image.



Enter the Stage Editor, load your wall, and add three track sources. Please follow carefully and refer to the diagrams. Place them in the middle of the wall (Figure 3), spacing them out evenly on the X-axis by 100 units or so. Add four light sources. Place three of them in line with the X- and Z-axes, (Figure 3) and 900 units in the Y-axis. Place the fourth light equidistant from the wall and the other lights. Put your camera in the same position as the fourth light (Figure 3). Make sure the camera and the fourth light are zero on the X-, and Z-axes.

Go into the Action Editor and change all the light sources to Conical and Diminish Intensity, and set the color to white or a slight yellow. Adjust the size of the three far lights to X 5000, Y 1000, Z 1000. Align each with their corresponding track, so that each light is pointed straight at the wall. Align the fourth to the center track also, and adjust its size to X 500, Y 1000, Z 1000. Align the camera to the wall and adjust the size of the camera so that the entire wall fills the perspective window. Adjust the wall size to accommodate that camera's sizing. Save this and render it.

You should end up with something like Figure 4. If not, check the map placement on your wall. If it is not in front of the Y-axis, you will end up with a white render. Just make sure it is a little on the dotted axis of the wall and you will be OK. Also make sure that the same dotted axis line is pointed toward the camera, or your image will be backwards. You could also tilt the wall up in the Stage Editor to give it more of a 3-D bump effect. Experiment. You can't lose anything but time. And just maybe, something interesting will come of it.

•AC•

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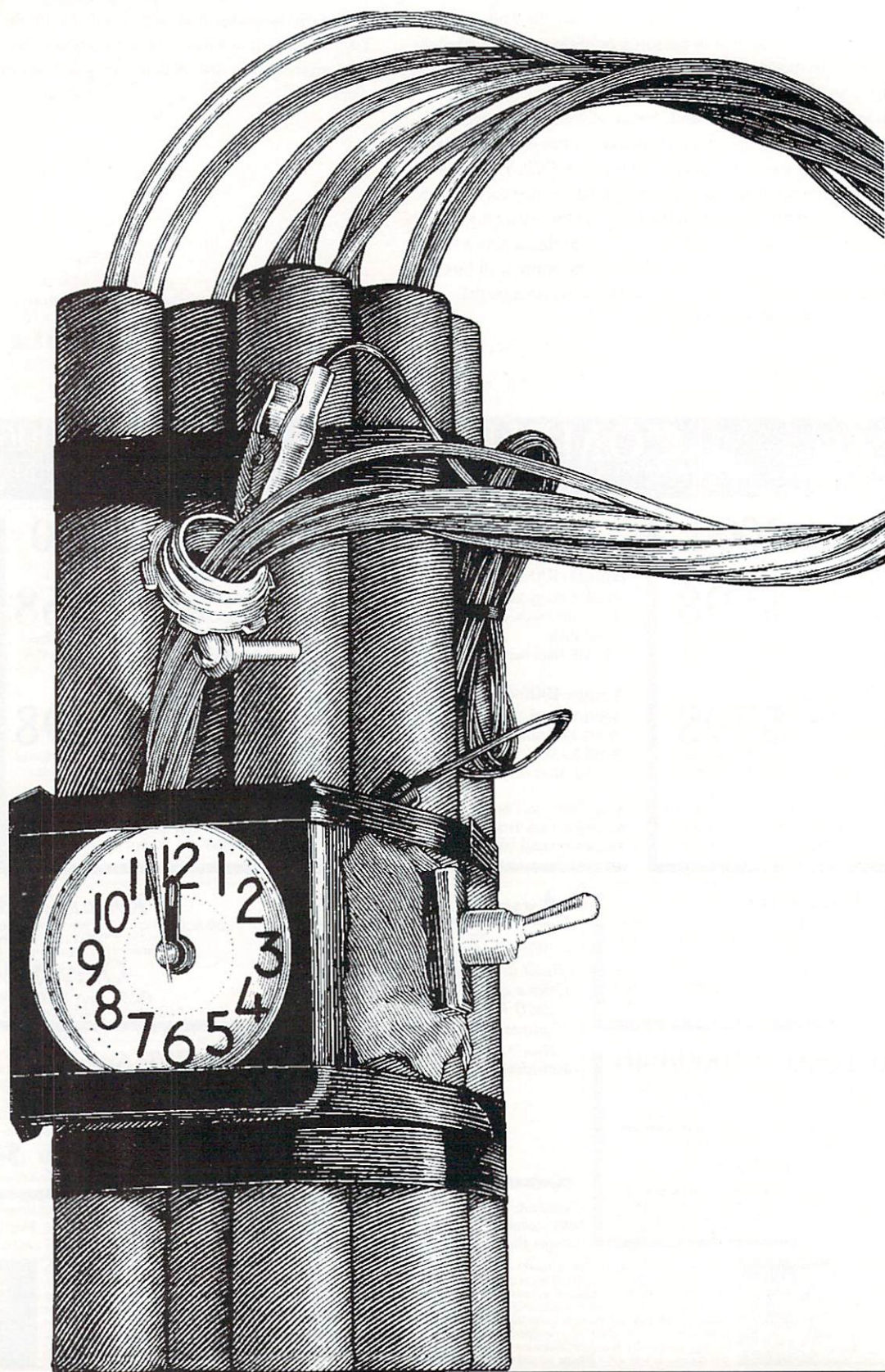
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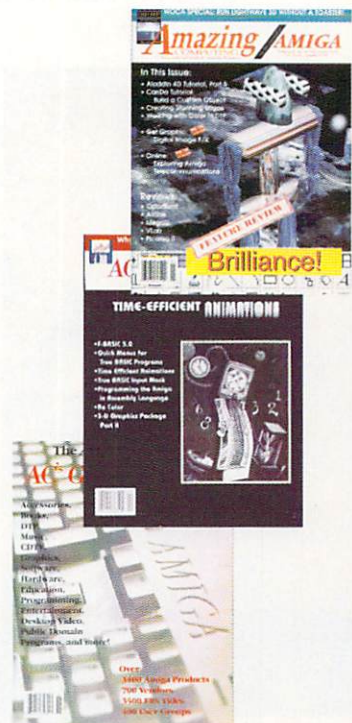
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Using ARexx and OpalPaint to Process Images

Automatically

Part II: pointillism

by William Frawley

With ARexx and a compatible paint application at hand, your mind races with ideas like electrons through copper wire. With ARexx it is easy for those ideas to come to fruition.

The following technique and ARexx program for *OpalPaint* were inspired by my mother's latchhook tapestry hanging in my studio (Figure 1). The distinctive pointillistic-looking pattern reminded me of the scene in *The Lawnmower Man*, where the evil thugs were kinematically pixelized into nothingness. The individual threads of the tapestry were also reminiscent of scoreboard light bulbs, not to mention the old Lite-Brite sets some of us used to have fun with. I thought it might be interesting to try to emulate that effect with ordinary graphic stills and a bit of programming. So as an exposition to our pointillism tutorial, I shall share with you a brief history of the pointillism technique. For those of you without ARexx and *OpalVision*, bear with me this month. This information will ultimately prove useful in the future if you do acquire similar tools.

### The Impressionists

Pointillism, or more precisely, divisionism, was a technique, born out of the Impressionist movement and popularized by Georges Seurat, of laying down dots of colors with the tip of the brush so as to achieve and adhere to the "law of the simultaneous contrast of colors, whereby adjacent objects not only exchange reflections of their own colors but create in each other reactions complementary to their own [see endnote]." For example, "in a yellow object set beside a red one a practiced eye will see a trace of green, the complementary of red." With this in mind, one begins to wonder if our contemporary, technological software abilities can

possibly attain this level of artistic complexity. Consider ray-tracing and realize how difficult it is for programmers to incorporate the physical property of radiosity into the reflection algorithms.

It was Seurat's objective "to find all the hues in the spectrum as well as a way to brighten or darken a given hue in relation to the simultaneous contrast produced by the colors around it." Quite a task even for an accomplished artist. Consequently, attempting to write a program using simple algorithms to mimic the deliberate and practiced intuitiveness of the human creative process with regards to color manipulation is like trying to build a skyscraper with



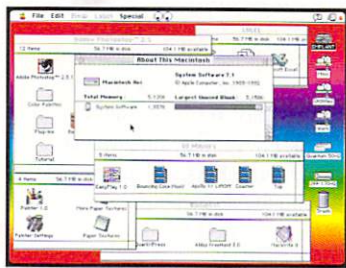


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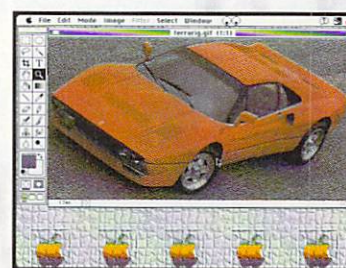
AppleTalk, printer, midi, and modem support can be provided through the two RS-422 serial ports. A high speed SCSI controller allows any SCSI device to be plugged directly into the EMPLANT hardware (including scanners, SyQuest drives, hard drives, CD-ROM drives and more!). The serial ports and SCSI interface can be used by Amiga programs and emulation modules *at the same time*! The EMPLANT hardware is a standard Zorro II/III plug in card for the A2000/3000/4000 (A500/1000 owners need a Zorro Bus adapter in order to use EMPLANT). A PCMCIA version for the A600/A1200 will be available in the near future.



Typical Mac emulation screen.



Multitasking! Just flip or drag down the emulation screen!



Adobe PhotoShop on your Amiga!

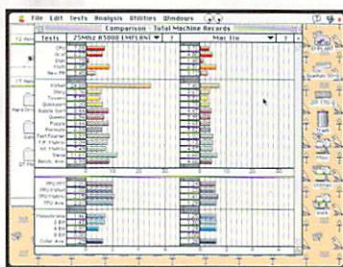
## FAST, FULL COLOR, STEREO SOUND, MULTITASKING MACINTOSH EMULATION!

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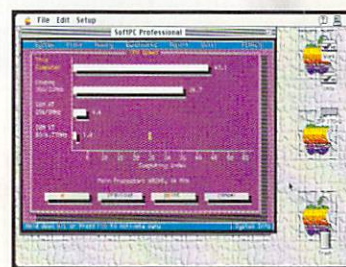
Support for up to 16 colors is provided for non-AGA machines. A4000 owners can use a full 256 colors! Support for Picasso II, EGS-28/24 Spectrum, Piccolo, Merlin, and Retina video boards is **available NOW!** Support for other video boards will be available soon! Imagine running PhotoShop in MILLIONS of colors on your Amiga! Now, imagine being able to 'flip' back to the Amiga side or drag down the Mac emulation screen! The Mac emulation (like all emulation modules being released for EMPLANT) fully **multitasks** with the Amiga! Now, install one of the above mentioned video boards and imagine the ability to play double-size QuickTime(tm) movies (with full stereo sound) **FASTER** than the equivalent speed Mac! The Mac emulation module \*requires\* an accelerated Amiga - 68020, or a 68030/68040 w/MMU) and 256K Mac ROMs (not provided).



24 bit video board support!  
(Picasso II video shown)



"Speedometer" comparison.  
(A3000/EMPLANT vs MAC Iix)



Run PC software on your Mac!  
(SoftPC Pro 'SI' rating shown)

## FUTURE EMULATIONS!

Since the EMPLANT's hardware is so versatile, a completely different computer can be emulated by just changing the emulation software patch and the ROM(s). Apple ][/+/e, Mega ST, IBM AT (386/486), C64/128, Atari 400/800, and even game machine (Genesis/SNES) emulators are planned in the near future...EMPLANT is not limited to a single emulation!

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All EMPLANT packages described above come with Mac emulation software and necessary device drivers. ROM(s) are not shipped with this product. Sources available upon request.

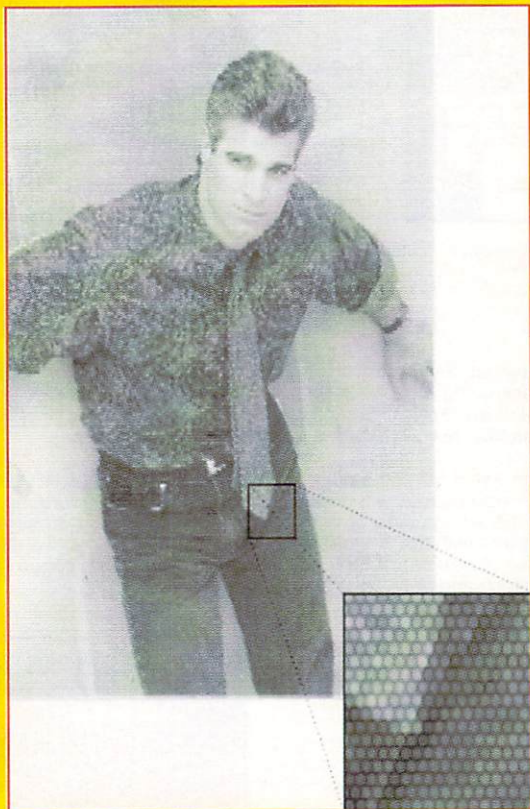
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# AMIGA AMIGA



Legos. Suffice it to say that I have included, in addition to my "latchhook" version of pointillism, a crude attempt at the kind of pointillism practiced by the Impressionists of the late 1800s in an ARexx script written for OpalPaint.

## The Pointillism Process

Regarding the "latchhook" pointillism that was the original basis for this tutorial, accomplishing this process manually would be a virtual nightmare; hence, the ARexx script. However, the basic steps taken to achieve the result are as follows:

First, define an even square matrix size ( $A \times A$ ) which will serve as the resulting circular "point" for pixel  $X$  in question. The larger the matrix, or "point," the more it will obscure neighboring pixels, resulting in a lossy image. Next, pick a pixel to operate on and determine its color values in the HSV system. Create a radial gradient for a solid circular poly using these values as the center color and a 60-80% reduction in the value component of the same hue and saturation for the edge color. Finally, replace pixel  $X$  with the new circular poly related in color but now with dimensions  $A \times A$ , your choice for the original matrix size. Repeat this process for the pixel which resides  $A$  pixels away in the next column. Once the row is complete, move down  $A$  pixels to the next row and begin again.

My attempt to manipulate an image for a true Seurat-type pointillism met with marginal success. I shall try to describe my steps nonetheless. First, instead of having the user pick a matrix size, I chose the smallest possible area to deal with, a  $3 \times 3$  cubic matrix. That way, the now square area of operation is centered over the pixel we are dealing with. Remember, the pointillistic paintings of the Impressionist era were generally quite large and were meant to be viewed from a distance so the individual hues and subtleties would blend more effectively. Therefore, what I tried to do here was to arrange for new hues to be substituted for the old one, which at a distance, would give the impression of the original color in the matrix. The two new hues in this case were calculated to lie 60 degrees on either side of the original hue, keeping both saturation and value constant. I then tried to arrange the new colors in an arbitrary pattern within the  $3 \times 3$  matrix. The rest of the process is generally the same as above.

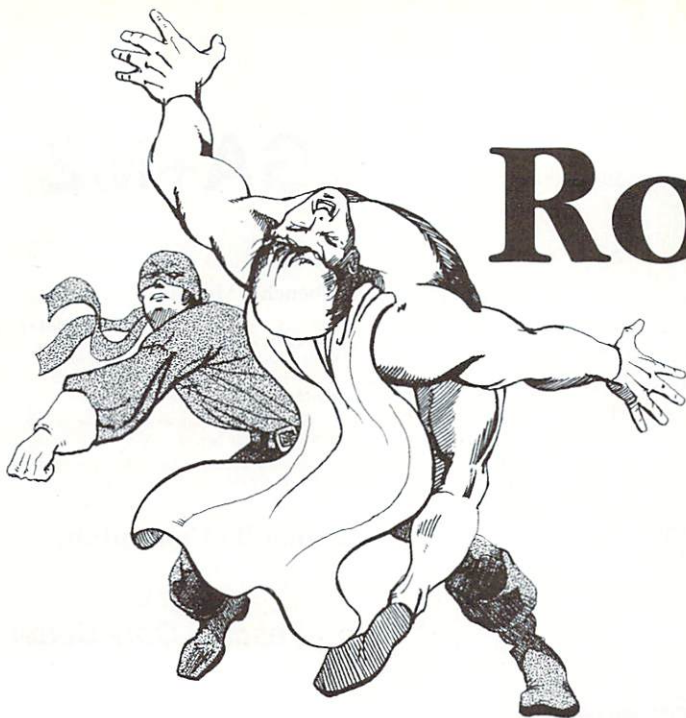
Try it out and view the results. Not exactly close to the concept, but you must take into account the fact we are dealing with light as opposed to pigments here. Any suggestions from you color specialists or art majors would be gratefully welcome. This was the general theory of the aforementioned processes, and now we will explore the major points of the ARexx code.

## The ARexx Impression

If you have OpalPaint, you might have noticed that when activating an ARexx script from within the program, sometimes Workbench pops to the front showing the "OpalPaint AREXX Output" window. Well, this first block of code uses the ARexx function ScreenToBack() to return the Workbench screen to the back of the bunch (Workbench is the default argument). Next we show the program title, then ask the user which type of pointillism to activate, followed by a backup page query. If our choice was pseudo, or "latchhook" pointillism, we then ask for a matrix size. Remember, the Seurat-type pointillism routine uses a constant matrix of  $3 \times 3$ . Our next query before we begin the main part of the program is whether to process the whole image, or just a user-defined section. As in last month's OpalPaint program, we are utilizing the convenient functions AskBool and AskInt to display and retrieve information from the user. We use the GetRect function to allow the user to then drag out just the area to be processed,

*(continued on page 77)*





# Roomers

by The Bandito

*[These statements and projections presented in "Roomers" are rumors in the purest sense. The bits of information are gathered by a third-party source from whispers inside the industry. At press time, these rumors remain unconfirmed and are printed for entertainment value only. Accordingly, the staff and associates of Amazing Computing cannot be held responsible for the reports made in this column.]*

## Commodore Update

First it was Ron Alexander, Commodore's Chief Financial Officer, who took to the lifeboats this summer. Now, Commodore's Jim Dionne has joined an illustrious line of Commodore U.S. presidents and taken the plunge: he's resigned his position. And so the revolving door swings again. The Bandito remembers that there have been something like five different presidents of Commodore U.S. since the Amiga came out. You know, if you had one or two bad presidents, you could blame it on them. But when you have that many who didn't work out, it seems to The Bandito that the problem really lies with the person who's picking the presidents. Irving and Mehdi haven't been doing a very good job in some fashion; either they're continually picking the wrong person for the job, or they're not giving the president of Commodore U.S. the tools to do the job. Seems pretty clear that at least some of the Commodore U.S. presidents (Dionne, for one) were pretty bright people. And from what The Bandito has heard, the corporate management is really at fault. The company's run by a Canadian financier and a banker, along with a board of

directors that might as well be carved out of oak for all the intelligent direction they provide. Have any of these people ever even turned on a computer? Do they know how to use one? Do they even know anyone who uses one? Hah.

So The Bandito really wants to know: did Dionne jump, or was he pushed? Was it the strain of Commodore's financial gyrations, or the anointing of a scapegoat? *[Editor's Note: Jim Dionne announced his resignation several weeks in advance. No other CBM president has given that much lead time. Mr. Dionne's resignation was, from all indications, his own idea.]* Seems likely from where The Bandito sits that Dionne could have been burned out from the stress of trying to get the job done working for people who have no clue about what the job is. Or, on the other hand, Dionne could have been a sacrifice to the financial community. You see, maybe the financial types will believe in the stock once more if we fire someone important and blame *him* for all the problems. Yeah, that's the ticket. Keep all those analyst types from poking around our financial statements wondering why we have a CEO paid a higher salary than almost any other company in the high-tech field, when the company's performance has been in the toilet ever since he came on board. Or why we have a chairman who gets an astronomical salary, too, for no discernible reason. Certainly it's not for all the profitable decisions he's made.

The Bandito has an idea: let's put Lew Eggebrecht in charge, fire Mehdi Ali, and get someone other than Irving to run the board. In fact, get a whole new board. Put some useful people on it; how about some executives from successful computer

companies? What a concept. Nah, better to keep the board packed with your golfing buddies who are more than willing to keep voting for larger and larger executive compensation packages. If anyone asks you what's wrong with Commodore, just remember the old proverb: fish rots from the head.

## Hardware the Hard Way

Commodore's been having some problems with the A4091 SCSI II adapter. You remember this item, don't you? That's the hard drive interface that many people thought should have been in the A4000 from the beginning; only the late unlamented Bill Sydnes ("father of the PCjr") thought that the brain-dead IDE interface was just fine. Well, Commodore quickly realized that a SCSI-II adapter was a necessity, so they rushed out that board in a few months. Unfortunately, it now seems they rushed it a bit too fast. The Bandito's heard that on early production versions of the A4000, you'll need a new Buster chip and some traces cut on the motherboard to make your A4091 work. Check with your local dealer if you're getting an A4091; your mileage may vary.

The vast changes at Commodore recently have left the timetable for future engineering projects in a state of uncertainty. Commodore is busy re-apportioning its resources, and priorities are shifting. From the few bits and bytes The Bandito has gleaned, the next generation graphics chip set known as AAA has been delayed further amid uncertainty regarding Commodore's future plans. We won't see any Amigas with these new chips until 1995, is the best guess currently. But stay tuned; things can change rapidly at Commodore these days.



While we're on the subject of future engineering projects, the fabled DSP board for the A4000 may be among the homeless these days. Apparently the board is getting its walking papers; marketing's judgment is that the potential sales aren't enough to justify the production expense, especially when production resources are so tight these days. But fear not; the DSP board may be sold to a third party for production. Interviews are even now going on, and The Bandito believes the DSP board will find a good home. This does open up the question of software support, though. Will developers be as likely to support the DSP when it's not being sold under the Commodore label? The Bandito hopes that the board's new owner is willing to provide some extensive software support, and to encourage others to do the same. The DSP board could provide a tremendous boost to image processing operations, among other things.

### Power Up Has Powered Down

The Bandito has heard from a number of disgruntled Amigans. It seems these folks participated in the Power Up program Commodore offered for the new Amigas; you remember, where you could get a free copy of *Deluxe Paint* and *Final Copy* if you upgraded to an Amiga 4000? At least, that was the theory. The inside story is another thing entirely. Seems the reality is that many people still haven't received their free Power Up software. Commodore blames the fulfillment house they used to process the orders. That fulfillment house is now history, and Commodore is still trying to track down all the people who should be getting software. Seems the fulfillment folks lost a lot of the Power Up names, as well as not

filling the orders. Boy, what a bunch of screwups. Say, is that the same group of people handling Commodore's dealer services?

### A4000T

The A4000T is finally going into volume production, perhaps as early as the time you're reading this column. The long-awaited tower version of the A4000 will not sport a faster CPU as some had hoped; it's the same machine as the A4000/040, but you get a lot more space for hard drives and cards, and a beefy power supply. Lots of video jocks will be happy to get one of these babies in their hot little hands. You can eat up room real quick with TBC cards, Video Toasters, gigabyte hard drives, and other such stuff. Why has full production taken so

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The hot rumor among the ex-Commodore employees—quite a crowd these days—says that Commodore will actually manage to show a profit in 1994, at least for a couple of quarters. Who knows what the rest of the year may bring? Granted, this profit comes because of massive overhead slashing, rather than booming sales. Still, a profit is better than what Atari has been doing for the past umpteen quarters. Their accountants buy red ink by the tanker car, and they use hoses to fill in the reports.

### AAA Compatibility

Among the many interesting questions bedeviling Amiga owners is this one: Will the upcoming AAA chipset be backward compatible with the A4000? In other words, will you be able to add the AAA chipset on a card to your A4000 to upgrade your machine to the new graphics standard when it arrives, or will you have to buy a new Amiga to get the advantage of new chips? Many A3000 owners certainly wish there were some sort of upgrade path for them, something less expensive than buying an A1200. Well, The Bandito has heard that the AAA chipset will be available as an upgrade option on the A4000; other rumors say that it won't be available. What's the truth of the matter? We probably won't know for sure until the AAA chips ship. The Bandito's best data is that Commodore isn't really interested in providing upgrades of that nature, even if it's technically feasible. Their first concern is getting out a new computer with the AAA chips, and that won't happen until late 1994. Until then, or even after that time, your AGA chips have tremendous power and should be enjoyed to the fullest. Some people are still

long? The culprit is CD32, from what The Bandito has discovered. Commodore's been so busy producing CD32 that there hasn't been time to retool for the A4000T. But someone must have noticed the profit margin difference, or something, since they managed to squeeze in the A4000T now.

### More from Commodore

Well, Commodore U.S. is finally moving to newer, much smaller headquarters. The Bandito figures they finally decided that each employee didn't really need their own office building. So the company has pulled up stakes and moved to nearby Lionville. Their new quarters should save a pretty penny on their yearly expenses. Too bad they can't get Mehdi Ali to move to a lower salary range; then they could really save some bucks.

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### Motorola's Future

What about the 68040, you ask? When can A1200 owners get the ultimate in Motorola power? Not until Motorola comes out with the new versions of the '040 that are in the works. The current chips are just too big and too hot to fit into an A1200; there's no room for the heat sink or the fans that would be necessary. Not to worry, though, because low-power (and low heat) versions of the '040 are on the way. You should see A1200 accelerators with an '040 in them perhaps as early as December, depending on how fast Motorola works.

But is there anything in the works beyond that? Or is Commodore going to have to move to a RISC chip of some sort to keep pushing performance in the Amiga line? Not to worry, says Motorola. They haven't given up yet on the 680x0 line. Motorola promises to continue the 680x0 line into the future. Within two years, Motorola promises to ship 680x0 CPUs over that produce over 100 mips; they expect 10,000 mips by the year 2000. The 68060 (next chip in the line after the 68040) is already a low-power 3.3 volt chip; after that will come 1.5 volt versions, and future chips will be all low-power. (For example, notebook computers really work best with 3.3 volt chips, giving you substantial battery time advantages.) Motorola is planning to put multiple CPUs on a chip, with superscalar, pipelined, parallel processing, and other functions all on one chip. This would work great with an advanced OS that supports multitasking, wouldn't it? Know any OSs like that? The Bandito does.

So Motorola expects to keep the 680x0 line at the forefront of computing power, the Pentium and PowerPC chips notwithstanding. And of course they'll do all that without the ridiculous Intel chip architecture. Maybe Commodore won't need to RISC a chip change after all, sez The Bandito.

### Toaster Screamer = Trojan Horse?

The Toaster Screamer is not only an amazingly powerful piece of hardware, it also shows off some of NewTek's finest tricks. No, not in the actual product, but in its strategy. The hardware is impressive: 4 RISC chips in parallel, running at 150MHz, providing the rendering power of a supercomputer (600 mips) for less than \$10,000. Yeah, all it runs is *LightWave*, but dedicated Toaster jocks don't really care

SGI happy; they're looking at a major threat to a major part of their business.

Here's the kicker: those killer RISC chips used in the Screamer are MIPS R4400 chips, the very same chips used in SGI workstations. More than that, a couple of years ago SGI bought MIPS, so SGI owns the company that makes the chips for the Screamer. Uh oh, you say. What's to stop SGI from saying "Hey, NewTek, we're not gonna sell you these chips"? Ah, well, here's where NewTek's clever strategy appears. MIPS has been trying to make these chips a standard, and so they've signed ironclad agreements with a variety of chipmakers to let these other guys make R4400 chips under license. So NewTek can buy the chips from a number of different places, and SGI can't stop them. Better still, since it's the same chip that SGI uses, SGI can't very well say that the Screamer uses substandard hardware. NewTek has, in effect, insulated themselves from SGI's most powerful potential weapons. And you can bet NewTek will aggressively market the Screamer to SGI's customers. Won't that be fun to watch?

### PhotoCD Is Hot

AsimCDFS by Asimware Innovations (416-578-4916) is planning a 2.0 version, and The Bandito hears that it will add PhotoCD capability, among other things. Drop a CD-ROM in your A4000, and you'd have a nifty CD-ROM workstation. You'd be able to read PC, MAC, PhotoCD and CDTV CD-ROMs, with the right software. The Bandito would like to see some other platform offer that capability! And of course, you'll be able to get PhotoCD with CD32, if Commodore's negotiations with Kodak work out all right.

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about anything else. This baby is intended for high-volume 3-D production, nothing else. Their target market is movie and TV studios: anyone who generates a lot of animation.

So what's the cool part about the strategy? Well, it's like this. The Screamer's target market is exactly the same as one of Silicon Graphics' (SGIs) core markets. You may have seen all the press hoopla about *Jurassic Park*, and how the special effects were done on SGI machines. Well, now the Screamer is headed straight at that market, outperforming a \$100,000 loaded SGI workstation. In fact, about 10 Screammers would give you the processing power of all the SGI machines used on *Jurassic Park*. So for about \$150,000 in Toasters and Screammers, just add some artist time and you could have your own *Jurassic Park*. This does not make

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## CD32 Has Possibilities

So far, so good, according to the Bandito's spies. The initial release of CD32 in Europe has been very successful; reports are that Commodore is selling out as fast as they can build them, and they're building them at the rate of 20,000 a week. Of course, there's no telling how long that rush might last, but it's an encouraging sign. Commodore has introduced CD32 into the U.S. at World of Commodore Pasadena, to enthusiastic crowds. Apparently Commodore has been busy lining up store chains to sell CD32 in the U.S. However, the big push for CD32 in the U.S. won't be occurring until 1994, from what The Bandito hears. Commodore is planning on introducing CD32 in a big way at the Consumer Electronics Show (CES) in January, and they're hoping to have over 50 titles to show off there. Of course, Commodore will have to compete there against 3DO, which is trying to have 70 titles to show off by then. And of course there's Atari's Jaguar, and Sega CD, and no doubt Nintendo will continue to try and create interest in their vaporous machine. Certainly the PR blitz has not favored Commodore so far, and the competition will be intense at CES. Despite the technical competence of CD32, many observers express doubts about Commodore's ability to compete with the marketing of other companies in the arena.

Well, The Bandito has a few ideas about that. Commodore should capitalize on the exclusive features of CD32, and not just try to sell it as yet another CD-ROM videogame console. They're sitting on a gold mine if only they put the right spin on it. The secret

to CD32 lies in its expansion bus.

Commodore is already planning to have peripherals available for CD32 that turn it into a complete computer via the expansion bus. Just add a keyboard, a floppy, a mouse, and a hard drive, and you have a very powerful home computer. Pricewise, you should be able to do this for about \$500; add in the \$299 for CD32, and it's pretty cheap. [Editor's Note: The current list price is \$399; the street price is not yet known.] Bundle in some software on a CD-ROM, and you've got a terrific home computer system. Best of all, you managed to sneak that into the home in the guise of a videogame for under \$300. Now that's a starting price point that sells home computers; remember the C-64 and how it took off when it hit that price?

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no other PC CD-ROM can play. And, even more cool, the PC user gets to access Amiga software. Commodore could create software on the PC that would let you run AmigaDOS on your PC screen, maybe even in conjunction with Windows. Give them a CD-ROM sampler of cool Amiga software—like 3-D packages, image processing, and paint programs—along with some killer demos of 3-D animation.

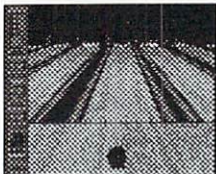
Yes, this is a radical departure from current thinking. But isn't something like that needed to revive Commodore's lagging sales? Selling CD32 to 50 million PC users could be just the ticket, even with the relatively low profit margins. Commodore should be able to compete effectively on price, since they have the tremendous volume of regular CD32 sales to help keep the price down. The product has all the features of other multimedia upgrade kits, plus a number of features they can't touch. Sounds like a combination that's good for a lot of sales, if Commodore can do some half-decent marketing. That's really the trick, isn't it?

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CD32 computer could include an expansion box that would allow you to add standard Amiga cards for even greater expandability. Maybe NewTek could be persuaded to create a lower-cost version of the Video Toaster for this; imagine getting a Toaster workstation complete for under \$2000. Now there's video production for the masses. Let's see any other videogame match that!

But there's an even cooler way to sell CD32: as a multimedia upgrade kit for PCs. Think about it: you have a double-speed CD-ROM drive and a really cool "sound card" for only \$299. All that's needed is to add an interface card to the PC and the necessary software drivers; that shouldn't add more than \$100 to the retail price. That's still way better than the current crop of multimedia upgrade kits for PCs. Best of all, it gives the PC user a large crop of really cool games that



by  
**Frank  
McMahon**

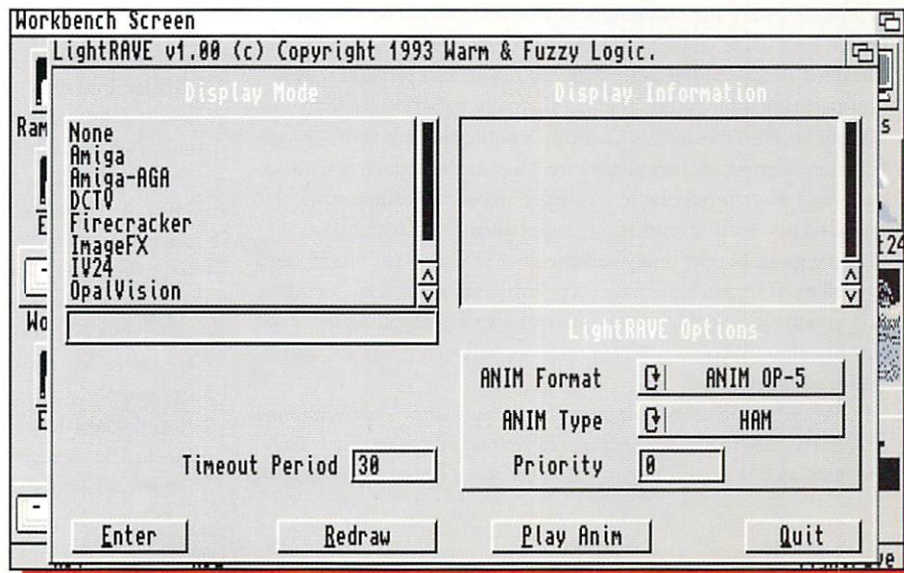
# THE VIDEO SLOT!

## LightRave—The Video Toaster Emulator

A Toaster emulator? When I first heard it, I didn't quite believe it. NewTek is very secretive about its hardware and lets out only so much information about its operation and configuration. Could a third-party company actually emulate the most successful Amiga product ever? Yes. It's real. Warm and Fuzzy Logic have released LightRave—the Toaster emulator. First things first: LightRave's main goal is to allow users to run *LightWave 3D* (version 2.0 or 3.0),

and the Modeler on any Amiga without a Video Toaster installed. It does not allow the user to run *The Switcher*, *Character Generator*, *ToasterPaint*, or *ChromaFX*. It allows access only to LightWave and the Modeler, although it might be nice in the future for LightRave to allow access to the Character Generator to produce 24-bit title screens. LightRave is a small box which plugs directly into the serial port on any model Amiga. The package comes with software that easily installs in about a minute. The only other requirement is that you have the Video Toaster software installed on your Amiga. Here's where I ran into a small problem. I decided to install the software on my 4000 and cleared off a 70MB partition.

Unfortunately the Toaster software wanted more space and did not allow me to install anything. So I brought my Amiga 2500 with the Toaster and software installed over to my 4000 and hooked them up via a Parnet cable and software. A new addition to the LightRave





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software, which will ship as this goes to press, allows users to install only the LightWave/Modeler files from the Video Toaster diskettes—a great time-saver.

Once everything is installed you merely click on the LightRave icon to bring up the display adapter screen. Since LightWave normally renders to the Video Toaster's (slow) framebuffers, an alternate display method was needed. How about Amiga AGA, standard Amiga, DCTV, EGS, Firecracker, Retina, Image F/X, GVP IV24, and OpalVision for starters? All are supported and most are a lot faster than rendering with the Toaster. Depending on your processor, 24-bit displays render in a second. Rendered displays (AGA, DCTV, etc.) take a little longer but still faster than the standard Toaster buffer as long as you have a fast processor. The best part is that the image quality is actually better than a real Toaster because the Toaster's output is only composite. You'll see a brighter, sharper, cleaner picture free of composite defects such as dot crawl when rendering to a 24-bit RGB board. Options are included for creating animations automatically from LightWave renderings, until now only available on a Toaster 4000, on standard as well as AGA machines. Also, a priority mode lets the user set how much memory LightWave will take up. By adjusting the priority amount you can divide memory between programs and multitask freely.

After talking to the company, I was quite impressed with how driven they are to produce and enhance this unique product. They are dedicated to supporting as many display devices as possible as

well as adding new features to the already impressive software. They have developed their own hardware device and have not infringed on NewTek's design for their own chips. You must supply your Toaster serial number to Warm and Fuzzy Logic in order to be eligible for updates and tech support so it is obvious they are committed to making sure the product is used only by legal, registered Video Toaster users. My testing of the product went excellent. Installation went smooth and I've been running LightWave 3D and using the Modeler on my Amiga 4000/040 with 12MB and experienced no problems whatsoever. It is especially handy at the cable TV studio where I work for several reasons. First of all I have a 4000 in my office and a 2500 with a Toaster in the control room. Having an alternate LightWave system makes it much more flexible. Also, the 4000 is faster at rendering than the 2500 and since LightRave is fully network compatible, I can now render "off-line" and not tie up our studio Amiga.

NewTek may not take too kindly at first to this hardware device, but if they stop and really think about this method, it actually enhances the productivity of their product for true registered users. I've only had the product a short time and already I can see it quickly paying for itself. If you own a Toaster, then LightRave will boost your productivity and let you easily get twice as much work done using two Amigas as opposed to one. Highly recommended.

#### Gold Disk's VideoFonts

*VideoFonts* are high-quality AGFA Compugraphic outline fonts that can be turned into bitmap fonts with just a few keystrokes. There are three styles per set—SERIF: CG Melliza, Clarendon Book, ITC Tiffany Medium; SANS SERIF 1: TC Avant Garde, Univers Medium Condensed, CG Triumvirate; SANS SERIF 2: Shannon Book, Microstyle, Microstyle Extended; DECORATIVE: Dom Casual, Brush, Cooper Black; and DECORATIVE 1: TC Zapf Chancery Medium, Letraset Revue Light, and Letraset Revue Shadow. Outline fonts are stored as mathematical curves and lines rather than a series of pixels. If you have a bitmap font in a paint program and you want to enlarge it or shrink it, it becomes very difficult to accurately keep the same look without getting jaggies. Commodore has come to the rescue with Workbench 2.0/3.0's outline font technology and Gold Disk uses a similar method although a little less flexible.

After installing the VideoFont Maker program and the fonts on to your hard drive (a hard drive is recommended but not required), you run the Video Font Maker program. The program screen is divided into three main sections: The File Block, Parameter Block, and the Render Block. You first select which font you want to use and then decide where you want the new font you to go. It's important to note that it's not a question of installing the new fonts into your font directory and then accessing them in all your traditional programs with the scaling options intact. That would have provided the most flexible method considering that most bitmap programs support scalable fonts, like *DeluxePaint IV* for example. Gold Disk chose to create a program that will scale them to whatever size and dimensions you want and then save them in the desired point size as a new font. You have complete control over how the new font will come out using options in the parameter block. The user can set the pixel height, aspect ratio, X weight (stroke thickness), Y weight, and even bold or italics with an angle



percentage. The render block will display a preview of the newly altered font before it is committed to disk. Finally, clicking on Create will render and save the new font set in the location the user designates. Video users will be especially happy to know that the program will automatically save in ToasterFont format, so fonts saved can be used with the Video Toaster. Font files can also be saved in standard font format and can be accessed from almost any program. They are fully compatible with Gold Disk's existing "Gold Disk Type" and "CG Outline Font" type libraries for use with their other products.

As for the fonts themselves, they come out excellent! Although I would have liked to see a little more variety, always helpful with video work, the fonts are fairly traditional and come out nice and sharp, especially at higher resolutions. The only drawback is that you cannot access them from regular programs and scale them in the font requester. You have to plan ahead and render your font sizes and save them in different files before you begin your work. This takes up more hard disk space and defeats part of the purpose outline font technology was developed: to save space and be flexible. For video work, the fonts are top notch and if you do any kind of titling with programs such as Deluxe Paint or the Video Toaster, these fonts are hard to beat.

•AC•

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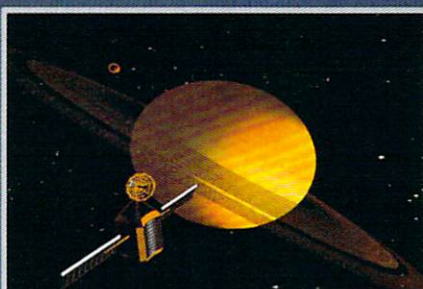
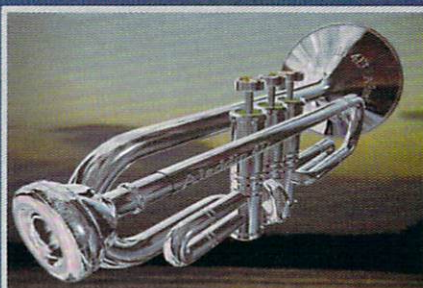
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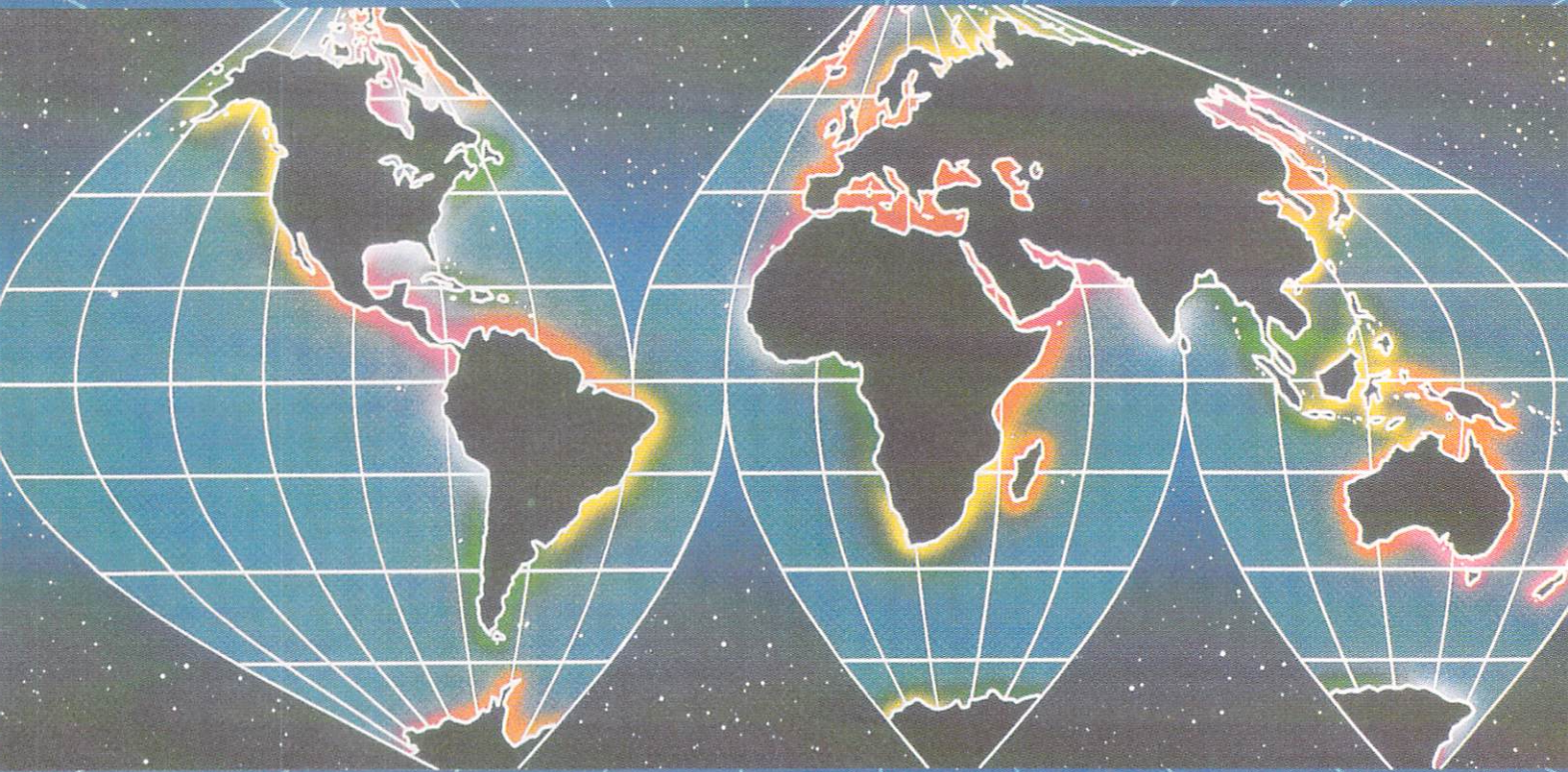
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assigning the top-left and bottom-right corner coordinates to the variables W1,H1 and W,H respectively. If we have chosen to process the whole image, W1 and H1 are assigned a value of zero as the starting point. Now to the heart of the code.

Depending on which method was chosen, an internal function call to the appropriate function begins by resetting the ARExx clock via the Time() function, do one iteration of the processing loop to determine the elapsed time that it took to draw one poly, then jump to another internal function called Display() for a computed estimation of the entire processing time. That figure is displayed with the option of continuing or cancelling the program.

If we decide to continue, two loops are established. The outside loop controls the jumping to the appropriate row in our image array based upon the height of either the entire image (H) or selected area, and skipping the correct number of rows by our loop increment variable (matrix). The similarly structured inner loop controls the actual painting of our "points." Again the columns are (matrix) units wide, and that is by how much our j loop is incremented. Inside, the color value of the pixel at coordinates j,i is determined by ReadPixel and converted to the HSV color system, whereby a new value Val2 is calculated (60% of the original) and converted back to the RGB system. A radial color gradient is then created using our two related colors, the original and its darker cousin. Finally, with AntiAliasing enabled, a solid circular ellipse is drawn at j,i using the previously constructed gradient as the fill pattern. The process is repeated for all the columns and the next iteration of the outer loop is performed. The program then returns all preference settings to their original state and ends.

### A Lasting Impression

If you're fortunate enough to try this yourself, you'll probably come to the realization that in order to come sufficiently close in results to a true pointillism, the technique required for software implementation of this process demands very special algorithms that operate on an entire image rather than mere mechanical point-by-point convolutions. In any case, the experience of developing even pseudo-pointillism was fun, as it should be. I truly pity those that haven't ventured past the confines of the wordprocessing and spreadsheet prisons, for a whole universe of graphic possibilities awaits our exploration. And with the Amiga and ARExx, our ship now has lightspeed capability.

Quotations from George Heard Hamilton, *Painting and Sculpture in Europe 1880-1940* (Penguin Books), 51.

## Listing

```

.....
/*
/*      Pointillism.oprx  v1.0  by William Frawley
/*
/*      This produces "pointillistic" images from normal ones.
/*
/*      Assign this macro to function key in OpalPaint.
/*
.....

```

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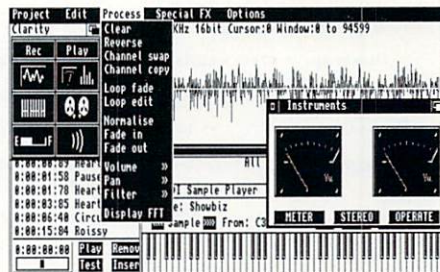
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```

SetPen RL GL BL      /* Place new pixel values in */
FreeHand j-1 i-1     /* 3X3 matrix centered around */
LastPoint            /* old pixel location (j,i) */
FreeHand j+1 i-1     /* via the pointillistic way */
LastPoint            /* Example: */
FreeHand j i          /*      **      LRL */
LastPoint            /*      **      or RLR */
FreeHand j-1 i+1     /*      **      LRL */
LastPoint            /* */
FreeHand j+1 i+1     /* */
LastPoint

SetPen RR GR BR
FreeHand j i-1
LastPoint
FreeHand j-1 i
LastPoint
FreeHand j+1 i
LastPoint
FreeHand j i+1
LastPoint

Elapsed=TIME('E')    /* Elapsed time for 1 operation */

IF i=H1 & j=W1 THEN CALL Display(Elapsed,Matrix)
ELSE NOP

END

END

RETURN

/******
/*
/*      Pseudo-type Pointillism Processing
/*
/******

Pseudo:

z=0                  /* Initialize Origin index */
Count=0              /* Initialize counter */
Offset=Matrix/2      /* Position to draw all odd rows */
Radius=Matrix/2

AntiAlias ENABLE 100 /* AntiAliasing to full strength */

CALL TIME('R')       /* Reset the elapsed time clock */

DO i=H1 TO H BY Matrix /* Outside ROW loop */

    Rem=Count//2      /* Use remainder division */
    IF Rem=0 THEN z=W1 /* to test for odd rows */
    ELSE z=W1+Offset  /* to offset start point */

    DO j=z TO W BY Matrix /* Inside COLUMN loop */

        ReadPixel j i /* Get color of pixel at (j,i) */
        PARSE VAR Result R G B

        RGBtoHSV R G B /* Convert to HSV system */
        PARSE VAR Result Hue Sat Val

        Val2=TRUNC(Val*.6) /* Decrease Value component by */
        /* percent shown */
        Val2=MAX(Val2,0) /* Must use # > 0 */

        HSVtoRGB Hue Sat Val2 /* Convert back to RGB system */
        PARSE VAR Result R2 G2 B2

        FillMode GRADIENT
        ActiveGrad 1
        ClearColGrad /* Need I explain these? */
        ColorDither 0
        GradType RADIAL

        ColGradTag 0 R G B
        ColGradTag .6 R G B
        ColGradTag 1 R2 G2 B2

        SolidEllipse j i Radius Radius /* Draw grad circle */

        Elapsed=TIME('E') /* Elapsed time for 1 loop/circle */

        IF Count=0 & j=W1 THEN CALL Display(Elapsed,Matrix)
        ELSE NOP

    END

    Count=Count+1 /* Increment ROW counter */

END

END

RETURN

/******
/*
/*      Display Approximate Time for Completion of Operation
/*
/******

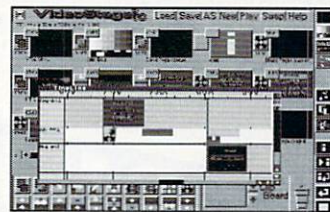
Display:

```

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PARSE ARG Elapse,Matrice

Rows=(H-H1)%Matrice /\* Calculate # of ROWS & COLUMNS \*/  
Columns=(W-W1)%Matrice /\* using Integer Division. \*/

TotalMin=Rows\*Columns\*Elapse/60 /\* Convert calculated, \*/  
/\* total elapsed seconds \*/  
/\* to minutes. \*/

Minutes=TRUNC(TotalMin)

IF Minutes>=1 THEN DO  
TotalSec=(TotalMin/Minutes)\*60 /\* Convert remainder \*/  
Seconds=TRUNC(TotalSec) /\* to seconds \*/  
END

ELSE Seconds=TRUNC(TotalMin\*60) /\* Just secs if < 1 min \*/

Okay 'Estimated Time for Completion: 'TotalMin,  
'\n\n ('Minutes' Minutes, 'Seconds' Seconds)'

AskBool ' Continue?'  
If Result=0 then EXIT 5

RETURN

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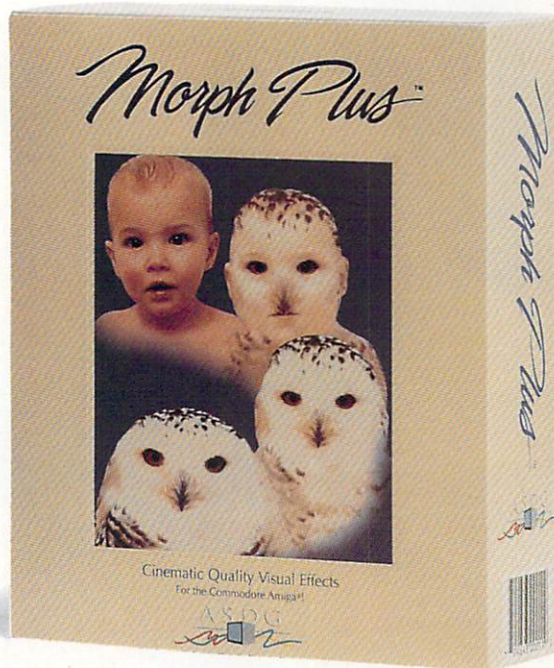
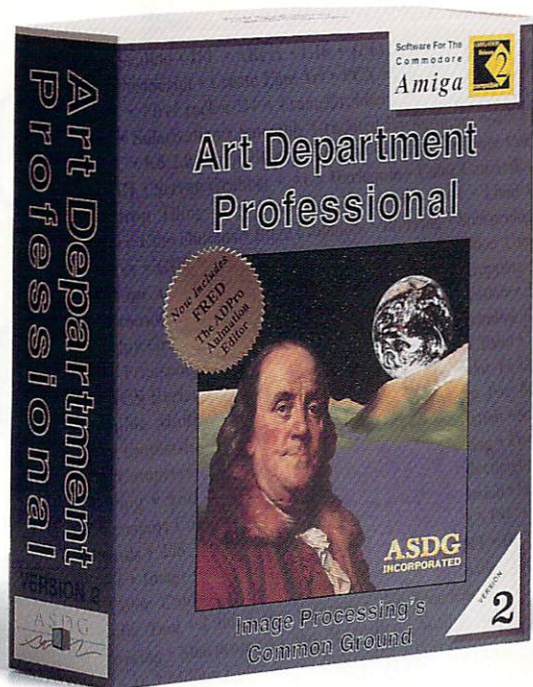
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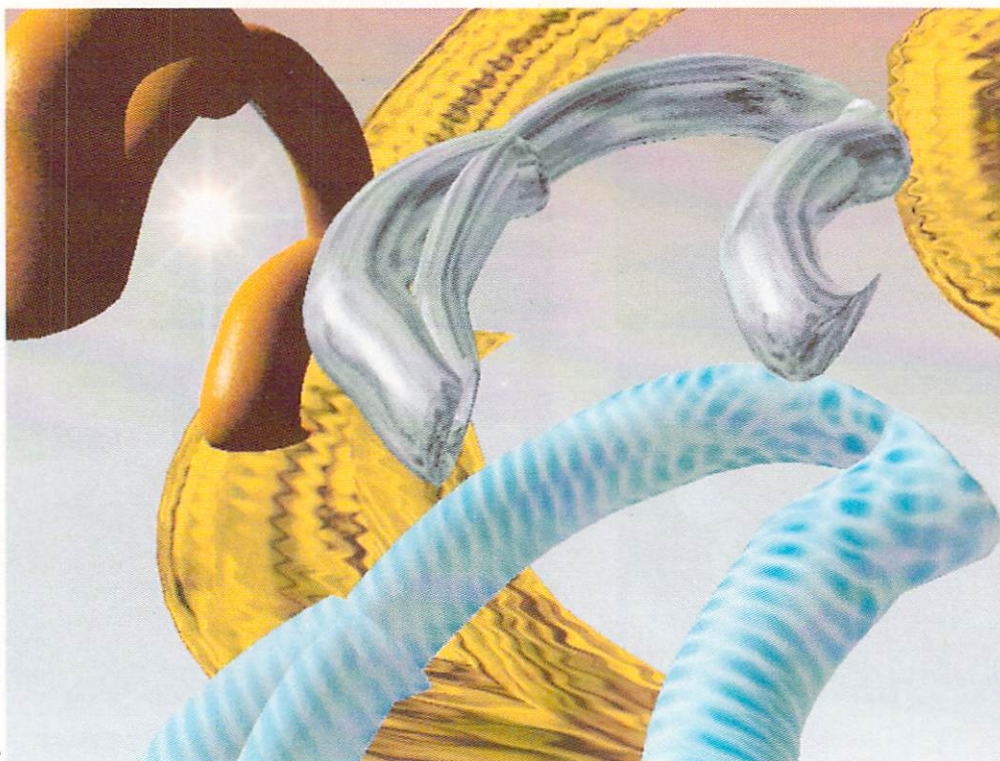
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# TOASTER 4000

by R. Shammis Mortier



Commodore, even with its questionable to non-existent marketing practices, somehow maintains a relationship with some of the most creative and innovative developers around. Because of third-party efforts, the Amiga continues to advance as a platform of choice from which to launch video and multimedia applications. NewTek, Inc. continues to play a major role in the sale and use of Amigas worldwide. Starting with their DigiView digitizer and DigiPaint software and up to the present Toaster 4000 packages and Screamer units, the Amiga, thanks in large part to NewTek's efforts, has been able to maintain its blossoming video personality.

As an Amiga 2000 Toaster owner with version 2.0 of the software, I took advantage of the NewTek upgrade offer to get the 4000 version. I had already purchased an Amiga 4000 '040, and had loaded it with 16MB of RAM. I added another hard drive (200MB) to make room for the software. Though the 2.0 software required only about 40MB of hard drive space, the 3.0 software requires about 100MB. Most of the additional space is taken up by a huge library of Postscript fonts and another three banks of Switcher effects. The turn-key offer from NewTek for a complete system is for an '030 4000 with a hard drive just big enough to handle the software and 8MB of RAM (plus 2MB of Chip RAM).

My only complaint concerning the Toaster 4000 package is not aimed at NewTek, but at the engineers who designed the A4000 itself. There's little room inside for expansion boards compared to the space in a 2000, and certainly a lot less than in my 3000 tower. Cramming the Toaster 4000 into this limited space was a nightmare, and temporarily knocked some of my RAM out of place. With the Toaster 4000 card installed, you've got room for only two more cards (I filled mine up with a TBC and an Interwork's EN-LAN Network card). Though the A4000 has a potential of four expansion

slots, the Toaster 4000 claims two for itself. Digital Creations is coming to the rescue by late autumn with the release of its "Video Slot" expansion box, an important consideration for Toasties with more than a few extra cards to install.

## So, What's New and Exciting?

There are five modules in the Toaster software: the Switcher, Chroma Effects (actually a part of the Switcher screen), *ToasterPaint*, the CG (Character generator), and *LightWave* (animation and the modeling). All but *ToasterPaint* have undergone extensive upgrading. *ToasterPaint* remains in its version 2.0 state, which is now sadly inadequate as compared with the depth of the competition's paint packages (for example *Brilliance* and *DCTV Paint* from Digital Creations, *OpalPaint* from Centaur, and other paint packages from developers of 24-bit cards). I hope that NewTek will replace *ToasterPaint* at the earliest possible moment without too much of a bite on those that have invested in the A4000 upgrade, and let's also hope that it will work on the RGB screen in HAM8 (at least) instead of requiring side glances at the program/preview monitors.

## The Switcher

Probably the second thing you'll notice about the Switcher screen, after the new interface design, are the two new default FrameStores designed for the 3.0 release. But that's only a hint of what's new and exciting. The processing speed and the enhanced screen resolutions of the Amiga 4000 are fully taken advantage of by the Toaster 4000 engine. Many of the new Digital Video Effects (DVEs) have drop shadows and full animated color elements. Some of the new effects have sound as well—breaking glass, roaring rocket engines, tearing paper, bursting light, baaing sheep, clicking



cameras, exploding fireworks, and more. Effects that use matte color backgrounds can now have those colors changed at will, and the names of all effects can now be displayed with a keyboard hotkey.

The most welcome additions in the Switcher concerns the animated effects, some of which rival the output of the most expensive systems. One features Kiki, the NewTek model, appearing on-screen like Tinkerbell with wand in hand. As she moves her wand, the sound of a bell and a bright flash signal the appearance of the alternate screen. For sci-fi buffs, there are three more animated effects: A 3-D rocket that flies in and causes a screen transition with rockets blazing, a journey into hyperspace, and a strange inter-dimensional journey. All of these include sound as well.

But the best news by far is that your own LightWave HAM8 animated sequences can be targeted to the Switcher screen, with the background toggled off so that your video can shine through. Examples of this can be seen with some of the new DVEs already in place, like those that are used to display Sales for use in broadcast advertising. I had a lot of fun with this new possibility, creating and running 4MB animations in front of video from the Switcher screen. The only problem with the Switcher animations you design yourself is that they are in a proprietary format, and cannot be translated by ADPro or anything else at this time—that I am aware of—for either viewing or manipulating in a paint program, except by grabbing each frame.

## The Setup Screen

The Setup screen, accessible from the Switcher, has been redesigned as well and includes new path menus, a GPI trigger toggle, which can help you run effects from a remote for interactive presentations, and a very useful variable setting that can be used to replace many of the Switcher's limited Slow/Medium/Fast effect speeds. Four buttons have been added that are keyed to the video inputs so that you can freeze the input from any source. Freezing has been made more intuitive than ever. You can freeze frames while a tape is running and then repeat the action again with a simple mouse click. Freezes are now written to a single framebuffer. Effects that include sound, however, have to run at their "Fast" settings if you want the sound to be heard. As with the Switcher interface, everything has been made even clearer, so that with just a little study and some added intuition even the Toaster novice can be up and running in very little time.

## ChromaFX

ChromaFX, which give your video footage various colorized metallic and posterized looks, is basically the same as its 2.0 predecessor. The number of effects, however, has been augmented from 52 to 99. The ChromaFX are accessed by selecting the active video input from Bank F of the Switcher screen in the default project.

## Toaster CG

Lots of changes have appeared in the Toaster Character Generator, with the biggest one being the addition of a huge library of Postscript fonts. All of these fonts are resizable, and are accompanied by a thick manual *Font Guide* addendum that pictures them all. I went through the manual after installing the software and deleted about 30 fonts from my disk. I just didn't need that many variations on a theme. I still have over 200 fonts left to choose from, more than adequate for video work. The interface for the CG has also changed for the better, making the creation of titles and credits, as well as other text-based pages, very easy and intuitive. Two additions here are worth mentioning. One is a collection of Toaster ColorFonts and

the other are the full-color jeweled bullets available available in the Symbola fonts choices. The jeweled bullets are 3-D ray-traced objects, and can add some real pizzazz to an informational slide.

## LightWave

The LightWave module was essentially rewritten, and it shows. Gone are the kludgy controls. In their place are screen menus for every facet of LightWave that appear at a click and are ready for input. Everything has a fancy 3-D look. The Layout screen has a new Easy ANIM button that allows you to write compressed ANIM files to the Switcher, as mentioned above. The Surfaces menu allows you to place the image seam anywhere you desire, so that it doesn't spoil the animation. The most glitzy addition concerns the new Lens Flare option. Lens Flares shine like headlights in the dark, and can be animated just like any other light source. The Camera menu sports a new list of film size choices, from Super 8 motion picture to 1/2" Video. The depth of field of the chosen format is incorporated so that the output will match the source your images come from. A new Gradient Squeeze option has been added to the Effects menu, so that the blend between two colors in the sky or ground can be moved on the screen.

The Record menu has several changes. The Save ANIM file is the most important, as it addresses the HAM8 saves that can be played from the Switcher. There are four resolution selections allowable for these animations: Super Low Res Preview (1/4 screen at 30 frames a second), Low-Res Preview (full screen at 30fps), Medium-Res Preview (full screen but limited action at 30- or 60fps), and Medium-Res Overlay, where color 0 shows through for the video input, full screen limited action at 30- or 60fps). I would prefer a delimited action area with a slower frame count as a user option, but still love the way that the HAM8 ANIMs look when played back on the Switcher screen. I think that most industrial applications could utilize the HAM8 playback (especially logos) without the need for single frame recording. That's how sharp the HAM8 material looks. You can also select a loop point for the HAM8 animation, and save the animation as single RGBs or FrameStores if need be.

The buzz-word is bones. What are they? Essentially, they're areas that define magnetism, so that parts of objects in their vicinity are forced to move in relation to a bones placement. A bone, for instance, could be placed in the leg of a digital cow, and given a



Above. Pictured from top left to right: One of the nine Switcher screens; The Toaster Setup screen; The ChromaFX screen; ToasterPaint.



# DIVERSIONS

## Pinball Fantasies

by Jason D'Aprile

I've never been a pinball player, even though some of the new, super high-tech strains of the game machines that have started hitting the local arcades have attracted my attention. I'm certainly not what anyone could call a fan of the genre, and computer pinball games have never had anything to offer diehard game players. Until now.

*Pinball Fantasies*, by 21st Century Entertainment, is a heck of a contraption. Consisting of four

different "tables," each with plenty of amusing diversity, *Pinball Fantasies* is, at the least, a technical marvel of great graphics, keen sound effects, music, perfect scrolling, and ball kinetics. The game calls itself a "Pinball Simulation," but there's nothing simulated about the real arcade rush that playing this game gives—especially when you get the game going at the furious pace that it's capable of.

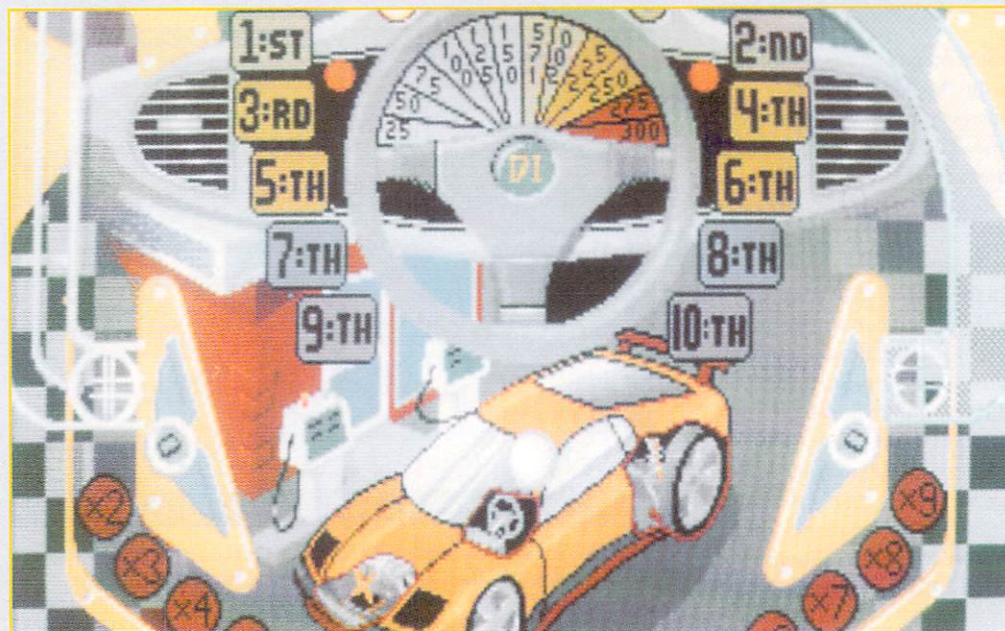


Controls are also perfect. Pressing any of the Shift, Alt, or Amiga keys controls the respecifier flipper, the space bar tilts, and either the mouse or the down cursor key shoots the ball. The game can be played by up to eight people,

probably resulting in this game becoming a real party classic.

Each of the four boards contains a different theme. Partyland has an amusement park atmosphere to it, where hitting ducks is a major theme to the table. In Billion Dollar Game Show, the idea is to rack up BIG prizes and as much money as possible. Speed Devils has a decided crash derby atmosphere to it, and Stones'n'Bones takes the pinball into a haunted house.

My personal favorites are Stones'n'Bones and Partyland, as they provide the most diversity. All of the tables cover about three full screens, and the table scroll-



Each of the four boards contains a different theme. Speed Devils, left, has an auto crash derby atmosphere.



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# Harpoon Challenger Pak: Signature Edition

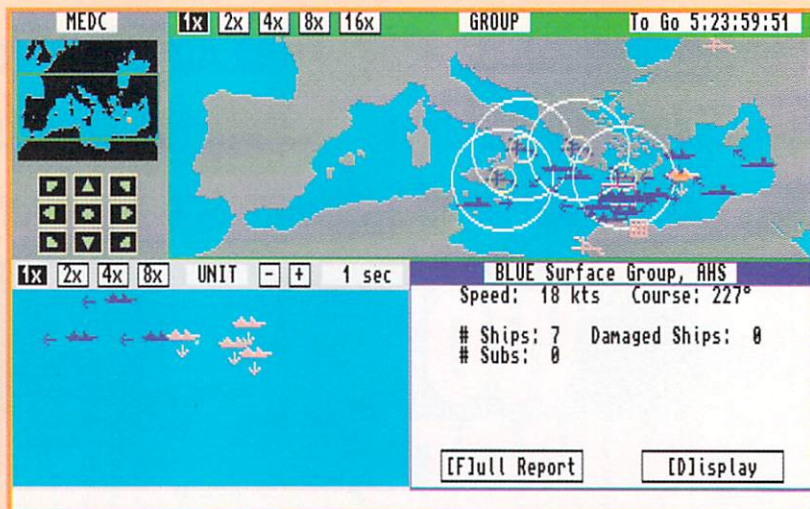
by Jeff James

Released a few years ago to wide critical acclaim, *Harpoon* (Three-Sixty) gave computer gamers the chance to experience the cold war at its coldest. A tactical simulation of modern naval combat, *Harpoon* quickly became a favorite of Amiga wargamers looking to pit the deep-water navies of the Soviet Union and the United States against each other.

With the recent release of the *Harpoon Challenger Pak: Signature Edition* (HCPSE), Three-Sixty gives naval wargaming aficionados the ultimate *Harpoon* software library. In addition to the original game of *Harpoon* (with the initial GIUK BattleSet), three additional BattleSets are included: North Atlantic Convoy (BattleSet #2), The Med Conflict (BattleSet #3), and the Indian Ocean/Persian Gulf (BattleSet #4). The Persian Gulf BattleSet is perhaps the best of the bunch, offering up new weapons and aircraft, such as the F117A Stealth Fighter, in addition to having a complete recreation of Op-

eration Desert Storm from the naval point of view. Once you've played through all of the included BattleSets, the included scenario editor allows you to create new and modify existing game scenarios. Rounding out the package is a collection of BattleSet pamphlets and the *Harpoon* instruction manual, a robust, fact-filled tome of over 150 pages that tersely discusses everything from modern Soviet naval doctrine to the launching of combat air patrols.

In terms of gameplay, HCPSE plays exactly like the original *Harpoon* released for the Amiga a few years ago. The player assumes command of a variety of modern



naval vessels—from torpedo-toting PT boats to mammoth aircraft carriers—and must skillfully employ them to defeat the enemy. Using an icon-driven, point-and-

Above, an example of the Mediterranean Conflict scenario.

ing, as the ball moves at its rapid pace, is virtually flawless. In addition to the great graphics of the table itself, at the top of the screen is a dot matrix score panel that prints out bonus messages and other information during the game—just like the new pinball games in the arcade.

The great sound effects in the game are everpresent. There's only a modicum of digitized voice, but I would prefer a lot more in the way of speech. The music for the

game, particularly the opening music, is just as good as the sound effects and graphics.

One very interesting feature of the game is the promise of more add-on tables, which I certainly hope we see on our shores. I would very much like to see tables that are even more complex and much bigger. Despite the already large three-screen size of the current tables, I find myself wanting tables that are bigger and better.

Pinball Fantasies is the perfect game for those times when you just want to play a quick game of something, an attribute that seems to be rare in the maze of deep, involving, complex games that take hours to beat. On the other hand, it's definitely not out of the question for a gamer to end up starting a quick game of Pinball Fantasies, then find himself glued to the screen for the rest of the night. This game is just that good.

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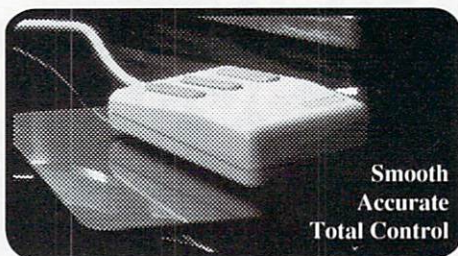
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click interface, players can order units about, set sensor ranges, launch missile attacks, and perform all the myriad duties required of a modern naval commander. Based on the traditional wargame of the same name by noted author

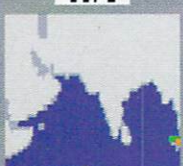
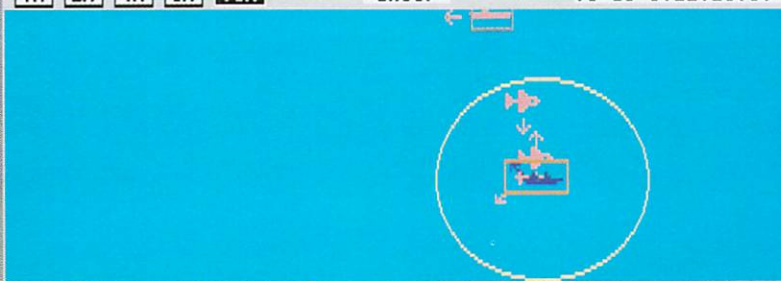

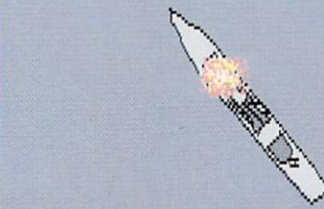
Larry Bond, HCPSE simply oozes detail. The designers have attempted to be as accurate as possible, from the sonar ranges and fire control abilities of individual warships to the air-to-air combat ability of military aircraft. For even

more detail, an extensive online database of modern subs, ships, and planes is also included, replete with pictures and an extensive amount of textual background information. Gamers fond of au-

thor Tom Clancy's novels *Hunt for Red October* and *Red Storm Rising* will feel right at home: HCPSE is cold war conflict at its nail-biting best.

	<b>Class:</b> CVA Admiral Kusnetsov <b>Length:</b> 300 meters <b>Displacement:</b> 65000 tons <b>Damage Points:</b> 1079 <b>Maximum Speed:</b> 32
The Ship with a Thousand Names, the Admiral Kusnetsov is the Soviet Union's first full-deck carrier. Carrying navalized MiG-29 and Su-27 aircraft, this ship would allow Soviet naval forces to operate beyond the range of land based air cover with much greater security than before. Unlike Western designs, the Kusnetsov class will carry surface-to-surface missiles, giving it an offensive capability even without its embarked air wing. This ship also carries the new Sky Watch phased array air search radar, and possibly could have battle management capabilities similar to the American Regis cruisers.	
<div> <span>[E]xit</span> <span>[S]ensors</span> <span>[W]eapons</span> <span>[N]ext</span> <span>[P]revious</span> </div>	

	<b>Class:</b> Attack F-117A <b>Cruise Range:</b> 1250 nm <b>Maximum Speed:</b> 594
The F-117A has learned "the Secret Ninja Art of Not Being Seen." Opposed to Jamming, which blinds the opponent, Stealth appears to not be there at all. This allows, under certain circumstances, complete tactical and/or strategic surprise. They should be used in initial strikes to take out enemy air defenses, airfields, and other key targets.	
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1x 2x 4x 8x	<b>UNIT</b> - +	1 sec	

As solid as the basic game design is, however, HCPSE shows its age in a number of areas. Although the main Harpoon program worked fine on all the Amigas I could test it on, including an A3000 running AmigaDOS 2.04 and an A1200 running AmigaDOS 3.0, it did exhibit somewhat erratic behavior on machines running AmigaDOS 2.0 or higher. Screen-blankers and some mouse utilities gave the game some problems; as a general rule, running the latest version of Harpoon (v1.1) alone (without multitasking) on a system that includes the original Topaz-8 Amiga fonts gave me the best results. These problems were even more evident in the included scenario editor, which frequently crashed when running under any



version of AmigaDOS higher than 1.3. A call to Three-Sixty's technical support number confirmed that Three-Sixty had stopped game development for the Amiga, and wasn't planning any updates to the current Harpoon release.

The game itself is a solid one; with a thorough dose of bug-fixing and interface enhancements, HCPSE would deserve placement in every Amiga wargamers software library. Even with the problems, however, HCPSE is still an excellent bargain. As it stands, HCPSE should appeal primarily to wargaming grognards with the patience to endure some minor program idiosyncrasies and

foibles. Even with the problems, HCPSE reinforces the status of Harpoon as the definitive computer simulation of modern naval warfare.

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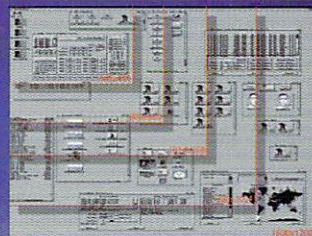
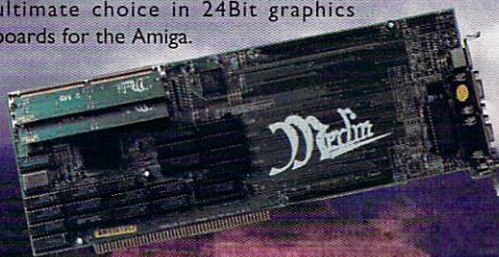
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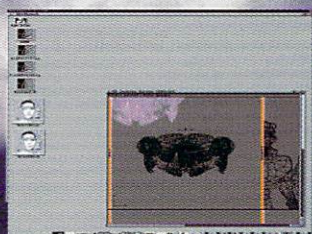
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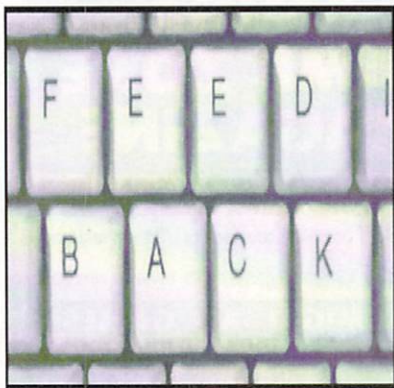
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# Feedback

## Letters to the Editor

*edited by Paul L. Larrivée*

### Where's the Monitor?

I am a faithful Amiga user and certified developer, but my patience with Commodore is wearing thin. Given that *Amazing Computing* is a loud voice in the Amiga community, I ask for your assistance. Around the end of April 1993 my 1969 CBM monitor that was under warranty died. I called CBM's Customer Service Department, and the monitor was picked up by Federal Express on May 3, 1993, as outlined in the "Commodore Express" program. Four months have passed and there is still no sign of a replacement monitor. Initially I was told by Customer Service that a new monitor would arrive in 5-7 business days. After numerous calls and a written plea to Customer Service that was never answered, I am no closer to a monitor than the day Federal Express picked up the monitor. Unfortunately, this is my third or fourth CBM monitor in two years. They fail so frequently that I have lost track. Fortunately, all but one died while still under warranty.

I am now in need of a notebook computer. Because CBM does not make notebooks, I shall be forced to purchase an IBM clone. Although I am beta-testing a data analysis program I wrote for the Amiga, once I get an IBM clone and start spending money on IBM software, I may give up on CBM and switch to the world of MS-DOS. I truly like the Amiga family of computers, but just like many others, Commodore's poor business sense may force me to leave the Amiga.

Douglas Stockman  
Rochester, NY 14609

*We faxed a copy of your letter, Mr. Stockman, to an officer at Commodore and have been awaiting a reply. If CBM contacts you directly, please call me at 800-345-3360.—PLL*

### A Programmer's Response

I would like to make some comments in response to Michael Duval's letter (AC V8.10). He suggested that programmers offer to port programs such as *WordPerfect* or *Lotus* to the Amiga. Unfortunately, this is not practical for a number of reasons. Even if programmers were available and willing to do the porting, the source code for the products is virtually the life blood of a software vendor, and few vendors would be willing to release their most important trade secrets to outsiders. They would be especially hesitant to release the code on a basis where the outsider would have control of the project and get most of the money. Furthermore, problems encountered with ports of a vendor's products will reflect on the vendor. The situation is further complicated by the need to repeat the procedure for updates.

However, there is an alternative, and that is to make it easier for the vendors to port their own products. The UNIX, POSIX compliant subroutine libraries have been written or are being written for a number of other operating systems, and the construction of such a library for AmigaDOS should not present any major difficulties. A similar set of subroutines is defined by the X-Window and Motif standards, which define the interaction of the software with the display, keyboard, and mouse. A developer's kit for X-Windows is already available from GfxBase.

If the appropriate subroutine libraries were created for AmigaDOS, it would be possible to port a large amount of UNIX software without modifying the source code. After it is compiled and linked, the software would be available immediately for use. This would make AmigaDOS much more attractive to vendors who already supply UNIX software. (Note that many UNIX vendors already have to compile and link separate versions of SCO UNIX, Sun, IBM RS-6000, DEC ULTRIX, HP-UX, etc.) Please remember that the number of users of AmigaDOS may be small compared to MS-DOS and Macintosh, but it is actually far greater than that of any single UNIX platform. In fact, I once saw some figures that indicated that the number of Amigas exceeds the number of all UNIX workstations combined.

I believe that the time of Amiga programmers would be better spent generating the tools for the vendors to convert their own software than trying to port the software themselves. There is an ancient saying, "Give a man a fish, and you feed him for a day. Teach a man to fish, and you feed him for a lifetime." If we port a program, we get one program. If we provide the tools to port programs, we can get a lifetime of programs. However, I also feel that development of these tools will require financial and technical support from Commodore because of the nature of the market. However, the potential benefits for Commodore are many times the potential benefit to the tool writer. A person writing programming tools will often sell only one copy for a given application, but Commodore will receive money for every Amiga workstation that is purchased to run



that software. Some vendors charge a royalty for each copy of the applications developed using their tools, but this can be awkward to implement. In any event, funding for development of software tools is a very complex matter and beyond the scope of this letter.

One area where Commodore could assist the programmers is to eliminate the need for dongles by providing a software-readable identification number on their systems. Much of the software for Sun systems has a value in a configuration file that is based on applying a one-way encryption algorithm, essentially a hash algorithm, to the system identification number. The software won't run unless the value in the configuration file matches the encrypted form of the identification number, and the user isn't provided with the encrypted form until he sends in the product registration card containing the identification number on the system. By providing unique identification numbers on the motherboard or expansion cards, this technique could also be used on the Amiga.

Any comments from other readers?

Bradley A. Ross  
King of Prussia, PA 19406

*We were confident that a programmer would offer his reaction and make suggestions concerning porting PC/MS-DOS titles to the Amiga.—PLL*

### Reacts to Mr. Luppens' Reaction

I know that many people don't have the opportunity to use Macs and PCs, as we do, in their daily working environments, so it is easy for them to hold inaccuracies in their thinking ("Feedback," V8.10). I have counted the number of PC/Windows (3.1) and Macintosh (7.1) crashes in our company and they far exceed those on the Amiga (2.1).

Crashes on the Mac tend to be more sinister. The Mac has an insidious problem: if you don't reconstruct your Desktop on a weekly basis, the Finder will lose track of your files and eventually corrupt the entire system. There is also no user Shell, so if an application won't run—or crashes—you can neither find out why nor fix the problem. There are also many other problems, but I'm not writing a users guide.

The bottom line is that the Mac Operating System is so mature that it is geriatric. In a heads-on between the Mac and the Amiga, the fundamental reason the

Mac won't "come out waving the white flag" is that the Finder will have forgotten where it put it!

I'm glad no mention was made of Microsoft Windows in that letter; I'm really tired of seeing the message "Unrecoverable System (or Disk) Errors."

"Roomers" is in the entertainment section of the magazine. *[Actually, it's not; the boilerplate at the beginning of the column explains it all.—PLL]* Why then would anyone take The Bandito seriously?

John C. Comerford  
Program Manager  
Technology Training Corporation  
Torrance, CA 90505

### Furthermore...

Mr. Luppens (AC V 8.10) seems to think that the inability of the FM Towns Games Console to be 100% IBM compatible isn't important. "So what?" he asks. "It's a game console, not a business software console." Obviously, Mr. Luppens, the desirability of an IBM-compatible console is that it is IBM-compatible. I'd be pretty upset if the new copy of *Falcon 3.0* I bought wouldn't run on my allegedly IBM-compatible, wouldn't you. Or is this backwards thinking, as you conclude?

Regarding Mr. Luppens' assertions that "3DO's speedy CD-ROM drive and excellent compression scheme, which the Amiga's current AGA chip set lacks," I draw your attention to the cover story about the CD32 in the same issue as Mr. Luppens' scalding letter. In the story, the author states that the CD32 has a double-speed CD ROM and "MPEG capability." MPEG is the industry-standard compression scheme, not some off-the-wall proprietary compression scheme. Mr. Luppens finds it hard to believe that the CD32 will have a more mature development system, stating that 3DO development will occur on a Macintosh. That's fascinating, but they will not be developing Macintosh software; they'll be developing for a brand-new, untested system. It will be a few years before software that really takes advantage of 3DO arrives. The Amiga and its developers have been around since 1984; they know the system. The software development tools are advanced and work well. I know because I program the Amiga myself. As The Bandito mentions, development systems for 3DO start at \$10,000, a far cry from an Amiga development system.

I suggest that the reader compare 3DO's stats with the CD32 cover story in

AC. You will find that both systems are pretty impressive technologically. The CD32, however, offers an impressive upgrade path to a real computer, with thousands of usable software titles already in existence. Future 3DO upgrades will be based on its market acceptance. The CD32, basically an Amiga 1200 with a CD-ROM drive, offers far more possibilities for hardware add-ons.

It should be clear that the current CD32 vs. 3DO vs. Genesis CD battle will be an exciting one. It reminds me of the VHS vs. BETA battle; anything can happen. Maybe Commodore can recapture some of its former glory and come out a winner. As an Amiga enthusiast, this is the outcome I hope for.

That being said, the biggest problem with the attack by Mr. Luppens is that he has missed the point of the "Roomers" column. The disclaimer at the beginning implies that it should be taken as fun. The column has had me nod my head in agreement; it has made me laugh; and, most importantly, it has made me think. I'd like to thank The Bandito for years of thought-provoking entertainment. Keep it up. I look forward to the next installment.

Paul Thurrot  
Scottsdale, AZ 85258

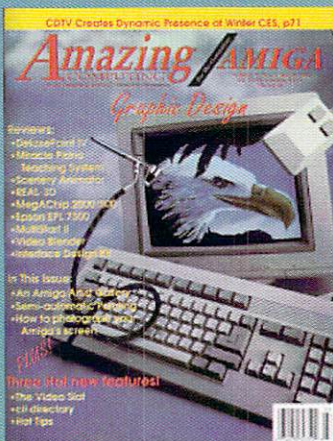
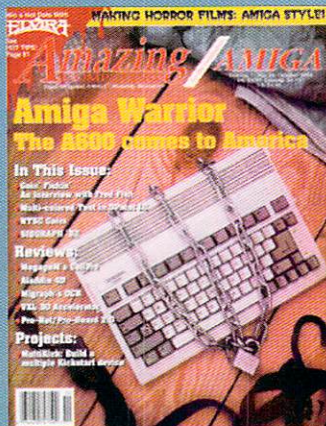
*In controversies generated by whose ox is being gored, it's usually more useful when readers themselves take time for rebuttals than us offering editorial comments. Thanks, readers, for answering The Bandito and then one another. We do need and appreciate your input.—PLL*

Please write to:

Feedback Editor  
c/o Amazing Computing  
P.O.Box 2140  
Fall River, MA 02722-2140

Readers whose letters are published will receive five public domain disks free of charge. All letters are subject to editing.





# AC's Back Issue

## I n d e x

Vol. 7, No. 9, September, 1992

Highlights include:

"Professional Calc," review of Gold Disk's premier accounting software by Bill Frazier.  
 "True Basic 2.0," a review of the latest release of the True BASIC language by Paul Castonguay.  
 "Developing Desktop Savvy," a special project for your favorite DTP software. Using specialty papers to create brochures and pamphlets, by Pat Kaszycki.  
 "The Video Slot" This month, learn about the new features of Imagemaster, by Frank McMahon.  
 Don't miss AC's super game coverage in *Diversions*.

Vol. 7, No. 10, October 1992

Highlights include:

"Amiga Warrior," Commodore's newest Amiga is a fighter capable of bringing the best of the Amiga to the American consumer.  
 "Megagame's CellPro," a review by Merrill Callaway.  
 "Multi-colored Text in DPaint III," A tutorial to produce dazzling effects with your text, by George Haases.  
 "Game Creation with AMOS," create your own Amiga game, by Jack Nowicki.

Vol. 7, No. 11, November 1992

Highlights include:

"Amiga 4000," Commodore creates a bold new direction in Amiga computing with expanded graphic resolutions, modular CPU, and more.  
 "Progressive 040/2000," a review by Rick Mataka.  
 "Remap Magic," Learn why this tool is your best bet for making use of your palette.  
 "Beginning C," Chue Xiong covers some of the basics of the C language.

Vol. 7, No. 12, December 1992

Highlights include:

"Polishing Basic Programs," Marianne Gillis shares the secrets of BASIC programming experts.  
 "Banners," A tutorial on creating banner-length printouts, by Pat Kaszycki.  
 "Structured Drawing & TueBASIC," paul Castonguay shows how TrueBASIC fully supports any level of hierarchical structure.  
 Also, complete reviews of Voyager 1.1, PIXOUND, VistaPro 2.0, and OpalVision.

Vol. 8, No. 1, January 1993

Highlights include:

"Creating a Storyboard in Final Copy," see how to layout your animation storyboard in Final Copy, by R Shams Mortier.  
 "A Look at 24-bit Libraries," Shams Mortier looks at 24-bit libraries.  
 "Using Laser Disk Players with the Amiga," Rom Battle examines the benefits of laser disks as a source of video images. He also shows an easy way to set them up.  
 Plus: A complete review of the new A1200 & coverage of Comdex Fall 92 & the FES-London.

Vol. 8, No. 2, February 1993

Highlights include:

"Extending the AMOS Sort," Dave Senger looks at the AMOS sort function.  
 "Business Cards," Soft-Logik's Dan Weiss gives an in-depth tutorial on how to create your own business cards.  
 "AD1012," a review by Rick Manasa.  
 AND! A special sneak preview of the One-Stop Music Shop from Blue Ribbon & complete coverage of the WOCA Toronto!

Vol. 8, No. 3, March 1993

Highlights include:

"Babylon 5," the Amiga changes the way TV shows are made, by les Paul Robley  
 "AmigaVision Projects," by William Murphy  
 "Art Expression," review by Merrill Callaway  
 PLUS: Creative business forms & CES Winter '93

Vol. 8, No. 4, April 1993

Highlights include:

"TriplePlay Plus & SyncPro," reviews of two great music products by Rick Manasa  
 "CanDo," a review of the application development system from INOVATronics, by Rob Hayes  
 ALSO: Super VideoSlot for April, ARexx, cli, and great Diversions!

Vol. 8, No. 5, May 1993

Highlights include:

"Directory Opus", review of the latest version of Directory Opus and a start-up tutorial by Merrill Callaway  
 "Media Madness," explores the inside of Blue Ribbon Soundwork's new Media Madness, by Todor Fay & David Miller  
 "SuperJAM 1.1," a review of the latest release of SuperJAM! by Rick Manasa  
 "ImageFX," review by R. Shams Mortier  
 ALSO: Super VideoSlot for May—The New Graphics Modes!

Vol. 8, No. 6, June 1993

Highlights include:

"AMOS Turns Professional", review of a major upgrade hailed as a comprehensive development system, by Jimmy Rose  
 "Searching Medical Literature," using the Amiga to tap the vast resources of medical on-line services, by Dr. Michael Tobin  
 ALSO: Newsletter Design, ARexx Programming, Hot Diversions

Vol. 8, No. 7, July 1993

Highlights include:

"TypeSMITH 1.0", review of Soft-Logik's new font editor, by Merrill Callaway  
 "OpalPaint 2.0," review of the latest version of this paint program for the OpalVision board, by R. Shams Mortier  
 "Structured Drawing," basic features and advanced techniques, by Dan Weiss  
 "DeluxePaint IV AGA," review of the latest paint package for the AGA machines, by R. Shams Mortier  
 ALSO: Super VideoSlot, ARexx, and New Products!

Vol. 8, No. 8, August 1993

Highlights include:

"Amiga Vision Professional", review Commodore's upgraded authoring system, by Douglas J. Nakakihara  
 "Art Department Professional 2.3," review of the latest release of AdPro from ASDG, by Merrill Callaway  
 "Professional Page 4.0," the latest incarnation of Pro Page, by Rick Manasa  
 "Pseudo Radiosity Effects," why ray tracing is not an accurate model of true light behavior, by Mark Hoffman  
 "T-Rex Professional," a review of the latest release of T-Rexx from ASDG, by Merrill Callaway  
 ALSO: AC Phone Book: A directory of Amiga Developers!

Vol. 8, No. 9, September 1993

Highlights include:

"Adventures with Aladdin", Part III of this tutorial series on Aladdin 4D, by R. Shams Mortier  
 "CanDo," First installment of this series for CanDo programmers, by Randy Finch  
 "Caligari 24," Review of version 3.0 of this 24-bit software, by R. Shams Mortier  
 "Coming Attractions," A look into the future attractions in Amiga games, by Henning Vahlenkamp  
 ALSO: WOCA—Australia & Summer CES!

Vol. 8, No. 10, October 1993

Highlights include:

"Making Waves", Focus on the wave requester in Part IV of the Aladdin series, R. Shams Mortier  
 "Clouds in Motion," Animated clouds in Scenery Animator, by R. Shams Mortier  
 "Media Madness," Discover what it can do for Bars&Pipes, by Rick Manasa  
 "Bars&Pipes Professional 2.0," review by Rick Manasa  
 "Bernoulli MultiDisk 150", A review of this great Iomega drive.  
 ALSO: Commodore's new CD32!

Vol. 8, No. 11, November 1993

Highlights include:

"CanDo", This installment covers developing a custom object by combining several standard CanDo objects, by Randy Finch.  
 "Brilliance," A complete review of this hot new paint and animation program from Digital Creations, by Frank McMahon.  
 "Online," The introduction of this new telecommunications column for the Amiga, by Rob Hayes.  
 "Get Graphic: Digital Image F/X," The introduction of AC's new graphics column, by William Frawley.  
 "Picaso II", A review of one of the best new graphics cards available, by Mark Rickert.  
 ALSO: WOCA Pasadena: Commodore introduces CD-32! Plus, the incredible LightRave, a Video Toaster emulator!



AC's TECH, Vol. 2, No. 1

Highlights Include:

"Build Your Own SCSI Interface" by Paul Harker  
 "CAD Application Design—Part III" by Forest Arnold  
 "Implementing an ARexx Interface in Your C Program" by David Blackwell  
 "The Amiga and the MIDI Hardware Specification" by James Cook  
 —and more!

AC's TECH, Vol. 2, No. 2

Highlights Include:

"Programming the Amiga in Assembly Language Part 2", by Forest Arnold  
 "Implementing an ARexx Interface in Your C Program, Part 2", by David Blackwell  
 "Iterated Functions Systems for Amiga Computer Graphics", by Laura Morrison  
 "MenuScript", creating professional looking menus easily and quickly, by David Ossorio  
 And Much More!

AC's TECH, Vol. 2, No. 3

Highlights Include:

"HighSpeed Pascal," by David Czaya.  
 "PCX Graphics," by Gary L. Fait.  
 "Programming the Amiga's GUI in C—Part 5," by Paul Castonguay.  
 "CAD Application Design Part 4," by Forest W. Arnold.  
 And Much More!

# AC's TECH

AC's TECH, Vol. 2, No. 4

Highlights Include:

"In Search of the Lost Windows," by Phil Burke  
 "No Mousing Around," hide that annoying mouse pointer with this great program, by Jeff Dickson.  
 "The Joy of Sets," by Jim Ölinger  
 "Quarterback 5.0," a review by Merrill Callaway.

AC's TECH, Vol. 3, No. 1

Highlights Include:

"Comeau Computing's C++," A review of this great new C compiler by Forest Arnold.  
 "Programming the Amiga in Assembly Language Part 5," by William Nee  
 "Make Your Own 3D Vegetation," Laura Morrison shows how to use iterated functions to create 3D trees and plants.  
 PLUS! The HotLinks Developer's Toolkit ON-DISK!

AC's TECH, Vol. 3, No. 2

Highlights Include:

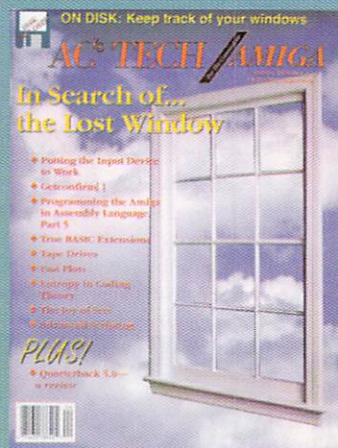
"Olé," An arcade game programmed in AMOS BASIC, by Thomas J. Eshelman.  
 "Programming the Amiga in Assembly Language Part 6," by William Nee  
 "Wrapped Up with True BASIC," Text and Graphics wrapping modules in True BASIC, by Dr. Roy M. Nuzzo  
 "ARexx Disk Cataloger," An AmigaDOS manipulator that produces a text file containing information about the floppy disks you want cataloged, by T. Darrel Westbrook  
 AND LOTS MORE ON DISK!

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Or if you're a programmer or technical type, do you understand how to add 512K RAM to your 1MB A500 for a cost of only \$30? Or how to program the Amiga's GUI in C? Would you like the instructions for building your own variable rapid-fire joystick or a 246-grayscale SCSI interface for your Amiga? Do you use easy routines for performing floppy access without the aid of the operating system? How much do you really understand about ray tracing?

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limited area of attraction. When the bone is rotated, the cow's leg rotates in relation to it. This is different from just rotating an element of an object, because using the cow's leg as an example, the leg itself might not be a detached element of the entire cow structure. Used and defined with care, LightWave's bones help the animator create some pretty astounding organic motions, and add to the variability of LightWave animations.

Most of the animation features of LightWave have spline controls attached to increase the variability of motion as an object moves through its paces on-screen. The manual explains using splined motions, and the interfaces that make spline motion possible are visually designed to make the process as understandable as possible. With splines, motions of the camera, morphs, and foreground dissolves can speed up and slow down. Light motions, colors, and cone angles can also be altered over time with spline motion controls. All of the spline motion graphs have the same adjustments, so learning to apply one is to become familiar with the process for all. Spline motion, once learned, creates animations that move much more organically than linear movements.

## The Modeler

This module contains the majority of the changes that 3.0 offers. I was never a fan of modeling in LightWave, but now am attracted not only to the new features, but to the screen layout as well. The Modeler is accessed from LightWave, just as before, but now it slickly appears with a horizontal wipe of the screen. The left side of the screen contains a list of modifiers that changes in response to any one of the six choices listed at the top of the screen: Objects, Modify, Multiply, Polygon, Tools, and Display. There is also a new double row of eight buttons at the top to allow you to jump to eight different layered screens. The top row is a foreground button, while the bottom row contains background buttons. Any screen may alternate as a foreground or background, with specific uses when it comes to the Boolean tools we'll describe later. The bottom of the screen contains another seven buttons: Point, Polygon, Volume, Cut, Copy, Paste, and Undo.

Objects can be loaded in and redesigned or designed from scratch. All design operations utilize the mouse, numerical input, or a combination of both. Any object that appears on the Modeler screen can be instantly exported to the LightWave screen for positioning and animation. There are four primitive shapes listed (box, ball, disk, and cone) as well as the capability to create freehand shapes. A Text button allows you to import any of the PostScript fonts that the CG uses—no more concern that your 3-D font is going to look like someone else's with almost 300 choices.

Once an object appears on the screen, it can easily be modulated in an almost infinite fashion. This is accomplished from the Modify, Multiply, Polygons, and Tools menus. In Modify alone there is a whole new basket of goodies, from tapers and twists to bends and magnetic modification. One of my favorites is the Vortex option, in which you define an area that becomes a veritable black hole that can add twists to the object with unsuspected results. A favorite aspect of a simple tool, size (resizing), is that wherever you place the cursor determines the center point for the operation. No need to point/click a center of operation first. With all of the manipulation tools, results depend upon which of the XYZ views you place the cursor in, and which way you then move the mouse. Everything is designed to be a visually intuitive as possible.

In Multiply, you can extrude, lathe, mirror, and clone-repeat as well as create arrays of objects. Arrays are duplicated clones that form a defined numerical 3-D matrix, and a requester appears to ask for both the number of clones on each axis and their distance apart. I used this tool on a 3-D computer chip object and created a bizarre space ship, just by array step-and-repeat cloning. In addition to extruding on an axis, LightWave users can also extrude shapes on a path or a rail. Motion paths for extrusion are saved from the layout screen, and objects that are drawn along these paths are automatically skinned in the process. Rail extrusion is similar, except that both 2-D and 3-D objects can be rail extruded along a drawn path (or multiple paths) that you create on a background layer. Rail extrusion is great for pipes and tubes, and can create the look of toothpaste oozing from a tube. Together with well placed bones, rail

extruded cylinders make great organic looking snakes. Patch and Skin create polygonal surfaces between curves and shapes. Though experiment will teach the tricks of use for these processes, neither is adequately referenced or tutorialized in the manual. The same can be said for morph, a related operation.



Left. Here are four of the new Switcher effects: Kikibell, PageRip, SwirlIn, and Gears.

Right. Four original LightWave paintings that took about an hour each to create and generate. From top left to right: Cosmic Snakes; Jurassic Twist; Amazing Graze; Holy Golden Apples.



And now for the Tool operations, given the most space in the Amiga press because they include Boolean operators. The ability to drill holes through objects with other objects is not new to Amiga 3-D nor to computer graphics in general. It is, however, brand new to LightWave users, and LightWave's way of doing it is very easy and understandable from the getgo. The three most interesting Tools are the two drill operations—Template and Solid—and the Boolean selections. All of these operations are engaged in a similar manner, by placing the drill or template on a background screen, and the targeted object on the foreground screen. Template drilling can slice the contents of the active layer with a 2-D template polygonal drill, while the Solid Drill uses a solid object in the background to drill an object in the foreground.

The four Boolean operators are Union, Intersect, Subtract, and Add. Add can use a 2-D drill, and adds the background template to the object in the foreground. The other choices use a 3-D object drill to interact with the target by various means: Union joins the objects together while eliminating the intersecting faces, Intersect leaves only the faces common to both objects, and Subtract (the most used) subtracts the volume of the drill from the target. Many thanks to the NewTek vocabulary engineers for staying away from terms like "XOR" and all of the other common but confusing Boolean terms. While I'm at it, thanks too for the ability to initiate operations without the need to see the screen redrawn first. As an aside, make sure your LightWave objects are double-sided, or poking holes through them will give strange results (use *Pixel 3D Pro* or *Interchange Plus* to make them double-sided if need be). There is also a "double-sided" option in LightWave's Surface menu.

The balance of the Tool section contains operators for points: merging, welding, quantizing, jitter (random movement in a specified radius), smoothing, and setting their numerical placement values. Following that are other operators for points and curve transitions. The Polygon menu features operators that allow you to create and vary the way polygons interact with the targeted object.

The last menu on the Modeler screen is called Display. By using its options you can magnify in or out, pan l/r and u/d in an edit window, measure the distance between any two points on the screen, fit all visible layered items or selected items onto an edit area, or use the screen Options. With Screen Options, you can alter what is seen in the preview windows, for instance, making points,

polys, faces, curves, normals, grids, and the backdrop visible or invisible. There are more functions here as well, but my favorite is the toggling on of the moving 3-D image of your sculpted shape (in wireframe or with hidden lines removed).

## Conclusions

Without a doubt, this is a superlative package. If you purchase the version that will work on your existing board without upgrading the hardware or your system to an A4000, some of the best features will be disabled. The A4000 system with the Toaster, however, makes for one heck of a professional rendering system. It's not inexpensive, but compared to the pricing and possibilities on other platforms, it's a great bargain. The Toaster has everything needed to outfit a small- to medium-sized video and graphics studio with state-of-the-art hardware and software that should pay for itself with one or two jobs. NewTek has created a product that continues to revolutionize the industry, while dozens of spin-off companies make a mark as well. The Amiga would not have half of its market if NewTek ceased to exist, because NewTek has made the Amiga visible.

## Suggestions for 4.0

NewTek needs a better customer relations interface to match the new interfaces residing in LightWave. It would also be helpful to have folks on the other end of the line who were more acquainted with the program so that users questions could be answered on the spot. Service is the name of the professional support game. This is an area that needs as much upgrading as the 3.0 software exhibits.

Other things I would like to see in the fantasized 4.0 software is a multiple Undo function in the Modeler, a way to make the Lens Flares full 3-D objects (rotatable), a separate disk of optional metallic and other surfaces, and the addition of a "do again" button next to the "undo" on the Modeler screen. There should also be an Undo feature on LightWave's main screen. There has been some mention (or rumor) of a hardware upgrade that would allow users to integrate sound more effectively with Toaster graphics. This is an area that should be pursued, though MIDI music vendors like Blue Ribbon SoundWorks already write to Toaster applications. The screen-referenced graphics in the manual are far too dark when following the tutorials, and the manual could use an index.

Please Write to:  
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Fall River, MA 02722-2140

## Please Note:

The Fred Fish Disk Collection, normally seen in this section, is not available this month. At press time, Mr. Fish was working diligently on a major new project for his collection and has not released any new disks. Look for a special announcement by Mr. Fish and AC in the next issue of *Amazing Computing*. For a complete index of all Fred Fish Disks with CATFish index, please see the Winter '94 edition of AC's *GUIDE To The Commodore Amiga* on sale at your dealer's now.





# And furthermore...



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## Roboflight: An Amiga Adventure

*Roboflight* is a short film produced by Zohar Rom of New York in conjunction with the Foundation for the Creative Community in New York City. The film features extensive use of Amiga animation and special effects. The plot is simple: An Amiga game junkie logs on to a secret computer and starts to play with a high-tech flight simulator. He thinks he's playing a game, but he's really remote-flying a new advanced fighter jet.

There is an extensive animation sequence with two jets in a fight over a rendered desert. The level of detail is excellent and the realism is right up there as well. Not bad for a budget production.

According to Zohar Rom, *Roboflight* was produced to showcase the talents of many individuals from all the different areas of movie making. It was also intended to showcase the talents of the Amiga artists who worked extensively on the film. The film's plot, according to Zohar Rom, revolved around the computer animation.

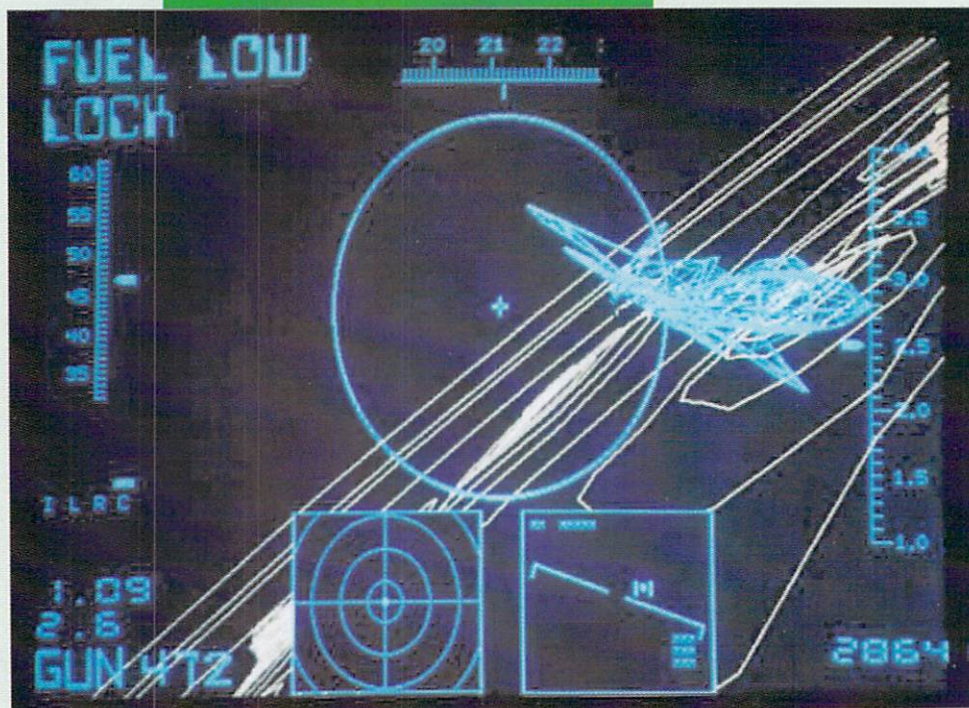
The Amiga sequences were an integral part of the film. The Amiga was also used in editing and post production.

The Science Fiction channel is showing *Roboflight* as a trailer for some of its movies. The film is also being shown around the New York City area. It was featured at the Dallas Film Festival and received a Telly Award. The group plans a full-length film featuring the Amiga in the near future.

•AC•

For more information contact:

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95-08 Queens Blvd. #3F  
Rego Park, NY 11374  
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| PINBALL FANTASIES | JAMES POND     |
| D-GENERATION      | LOTUS TRILOGY  |
| SENSIBLE SOCCER   | DESERT STRIKE  |
| DIGGERS           | LIBERATION     |
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|                   | MICROCOSUM     |
|                   | GENISIS        |

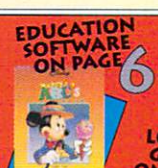
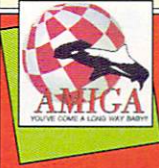
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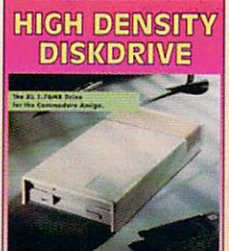
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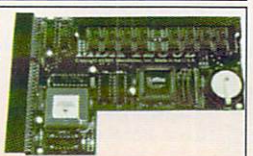


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 40MHz 68EC030 powered acceleration Optional 40MHz FPU up to 32MB of 32-Bit RAM  
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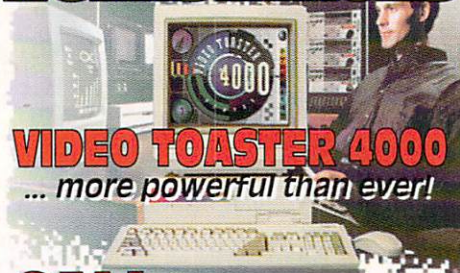
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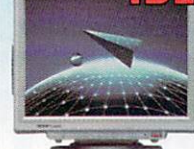
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- Compatible with ISO 9660, High Sierra Group, Macintosh HFS, Multi-Session Photo CD, Multimedia PC (MPC) and QuickTime
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Software Included

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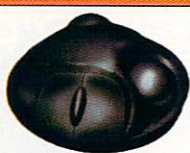
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## OPTO-MECHANICAL MOUSE

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A good-looking superb feeling and ultra high-resolution mouse. 2900dpi

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Low profile, heavy duty plastic base-steel shaft, leaf type switches. Extra long. Arcade style grip moves smoothly into all 8 standard positions.



**\$21**

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Compact and ideal size for children. Heavy base for hours of gaming action.



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Larger version of the Slik Stik with left and right buttons for either hand operation.

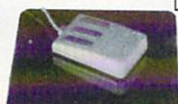


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## OPTICAL MOUSE

**\$79**

Fully optical mouse with no moving parts. No ball to clean. Light beam activated. Includes mouse pad.



## MIGRAPH MONOCHROME HAND SCANNER

**\$199**

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Stick control with full-sized, foam-padded, pistol grip handle, and adjustable handle tension. Turbo-fire is a new feature on each of the three buttons, providing even faster response & a greater degree of control. Automatic trigger point adjustment of the tension wheel.

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Arcade durability in a compact joystick. High quality PC Board with 5 built-in leaf switches. Specially designed grip handle with thumb action fire button. Durable, high impact plastic construction.



## TOP STAR JOYSTICK

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 • Durable metal center-stick  
 • Six enclosed microswitches  
 • Auto-fire  
 • Patented shock absorbing system



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A truly ergonomic physical design that's soft, pliable and fitting to the human hand. Function button strategically placed for quick reaction and ease of touch.



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AUTOFIRE. Quality microswitches for positive response. Unbreakable solid steel shaft. Designed to fit your grip. Thruster button and 2 trigger buttons for fast action. Hi-tech plastic shell for looks and strength.



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Only 9 inches high, 880K.



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Essential audio peripheral for beginners to digital sound veterans. Renowned full-featured sample editing and music composition software. A handy Control Panel for compatibility of any sampler software. A 2nd diskette overflowing with ready-to-play sound effects!



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- AGA compatible
- OCR Jr. text recognition - S/W available option



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High-quality, versatile genlock is completely software controllable through its user-friendly control panel software or through AREXX or the CLI. Can accept on Y/C or two composite, Y/C, RGB, YUV outputs. Many adjustable parameters such as brightness, contrast, saturation, hue sharpness, filtering, gain. Full audio support. Allows all Amiga's custom chip genlock control features to be utilized. Can load and display IFF images.

## RETINA

24Bit Frame Buffer and Workbench Emulation. Analog RGB output, 800x600 full 24Bit 16.7 million color display. Non-interlaced Full Workbench Emulation with resolution such as 1024x768 or 1280x1024 in 16 colors or even more! Up to 2400x1200! Paint program comes with Retina. The Retina can still be used to display 24Bit graphics while emulating Workbench. The Retina requires the 2.0 or greater operating system.

## TOCCATA

**\$499**

The Toccata is a full 16Bit audio digitizer with 3 Stereo inputs, digitize at up to 48 KHz in 16Bit and 8Bit direct to harddisk. Playback from HardDisk can be up to 16 channels in 16Bit. 64 Times Overstepping, 16 different sampling rates, Frequency Response 10 Hz to 20 KHz. Simultaneous Record and Playback from HardDrive.

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**\$549**

Create your own text & titles with spectacular Amiga graphics & using the RocGen plus combine your favorite video with the studio enhancements of overlay, dissolve & invert "keyhole" effects.

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16 Bit Stereo Sampler with superb quality of 16 Bit technology the hardware cartridge contains two 16 Bit Analog to Digital/Digital to Analog converters to allow STEREO sound digitizing. Stereo PHONO outputs are provided for connection to an amplifier or mixer. The hardware plugs into the Serial and Printer ports and can be used with the whole Amiga range of computers. Also contains a MIDI interface for use with MIDI keyboard or similar, which is compatible with major commercial software.

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First 8-track audio card available on any platform. Includes Studio 16 software and built-in SMPTE time code reader. Supports stereo with 16-bit resolution. Records, edits, plays back direct to hard disk. For A2000/3000.

## AD1012 with STUDIO 16

**\$539**

## AD516 with STUDIO 16

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## CLARITY

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### GUNSHIP 2000

In the tradition of Gunship, the award-winning, best-selling simulation of the AH-64 Apache, Gunship 2000 gives you total command of a full multi-copter troop of America's most powerful and versatile rotor craft.

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In Sid Meier's Railroad Tycoon, feel the pride and excitement of creating an industrial empire in the Golden Age of Railroads. Explore and develop new markets in the U.S. and Europe. Stay up-to-date with locomotive technology. Compete against rail barons eager to crush you or brush you from the path.

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### GEARWORKS

Gear Works™ is the most unique puzzle game to hit the market in years. In Gear Works™, you will connect various gears together in order to transform Twelve Wonders of the Ancient and Modern World into time pieces. You build the inner mechanisms by linking together gears of various sizes and colors while racing against time and fighting against friction. Watch Out for the Poffins, two gremlin-like creatures, that will torment you by rusting the gears and by breaking off the gear mounting pegs.

**\$31**

### LORDS OF TIME

A graphic adventure on a grand scale. Guide our time traveler on a quest to return to his own world and time. Superb graphics, 10,000 playable screens including caverns, mazes, forests, mountains, islands, and castles. Character can learn skills, choose from inventory of more than 50 items. Adventuring in its highest form.

**\$19**

### A320 AIRBUS

Sophisticated flight simulator of a commercial A320 Airbus. Programmed in cooperation with Lufthansa Airlines. Extremely realistic.

**\$44**

### WALKER

It's the most awesome machine of mass destruction ever to stalk your screen. Fitted with the most powerful twin cannons yet developed and a real mean attitude, the Walker has the destructive powers of an H-Bomb and the charisma of a Kalashnikov. Featuring a unique control system which gives you total control over movements and attack capabilities of this fearsome war monster.



### STRIP POKER 3

Strip Poker III offers three new opponents who take you on in a challenging game of poker with some very different table stakes! The graphics have been extensively updated, using the Amiga's hold and modify (HAM) graphics capability to produce life-like displays. The program uses digitized speech to better define each opponent's personality.

### STRIP POKER 3 DATA

Strip Poker 3 Data #1  
Strip Poker 3 Data #2  
Strip Poker 3 Data #3  
Strip Poker 3 Data #4  
Strip Poker 3 Data #5  
Strip Poker 3 Data #6

**\$16 \$16 \$16 \$16 \$16 \$16**

### PUSHOVER

Negotiate many screens of mind-boggling problems. Each level has a door to the next. Cause a chain reaction of dominos falling to open the doors.

**\$35**

### LEMMINGS

You've never seen anything like it! Herd of tiny characters that you have to guide through many levels of obstacles and adventures; building bridges, digging tunnels, climbing mountains, parachuting to safety. One player or split screen for two player action. 120 mind-blowing increasingly difficult playing levels and some of the most entertaining game playing music you'll ever hear.

**\$29**

### WHERE IN THE USA IS CARMEN SANDIEGO?

Now, she's out to steal the great treasures of the United States. As you travel, you'll learn about the geography, economy, and history of all 50 states plus the District of Columbia. Package includes Fodor's USA travel guide. You'll work your way up through ten detective ranks.

**\$31**

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Summer 1940. The future of World War II hangs in the balance. The cream of the German Luftwaffe and the aces of the RAF are locking horns in their most crucial confrontation yet!—The Battle of Britain. Relive the crucial days of the battle as controller, pilot or gunner.

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### AIRBUCKS

It's your chance to build a global empire from the humble beginnings of one plane and a landing strip! You start with \$100,000 and a DC3 in 1946, right at the start of the air travel boom. You decide which places to fly to, when to buy new planes, and how to split each plane between first class, coach, and cargo.

**AGA \$41**

### LEMMINGS 2

The Lemmings are back to amaze you with even greater feats of skill, balance & stupidity. These little guys are part of a sequel that has been called the best selling Amiga game ever. Now with many new skills and tools these little green haired guys are getting in even more trouble. And it's your job to prevent the extinction of these brainless creatures.

**\$37**

### WHERE IN TIME IS CARMEN SANDIEGO?

Carmen Sandiego and her nefarious gang are at it again, pinching priceless objects from all over the world, then escaping to other eras. You can use the Agency's Chronoskimmer to travel through time. And there's a paperback copy of the New American Desk Encyclopedia in your locker-full of timely information to help you crack the case. We've narrowed it down to sometime between 400 A.D. and the 1950's. Talk to witnesses and informers, collect clues, track Carmen and her 15 colleagues in crime around the globe.

**\$31**

### ZOO

NINJA OF THE "Nth" DIMENSION. He's an interstellar Cosmos Dweller, quicker than a flash and sharper than the 7 Samurai... Once every year, the games world is rocked by a game so colorful, so big, so demanding, so awesome, so feature packed, that everybody just looks at it and says "THAT IS IT!" This year, ZOO is defining IT!

**BOTH \$34**

### WAR IN THE GULF

Take command The Iraqi Republican Guard have overrun the oilfields of Northern Kuwait. War in the Gulf follows the fortunes of a crack unit of M1 tanks as the action unfolds. 25 battle areas individually coded to a very fine detail. View battlefield from 4 different perspectives using a 3D mix of bitmap and vector graphics. Take command.

**\$31**

### WOODY'S WORLD

Help Woody save the Magic Kingdom in this console-style action game! This is perhaps the greatest platform game ever devised and with no less than 60 HUGE levels. It contains countless secret rooms, plenty of power-ups, bags of bonuses, more than an hour of music and plenty of variety in the 20 different settings.

**\$39**

### HARRIER ASSAULT

Multi-mission strategic simulation-accurate flight model, control fleet, vehicles, troops, & airborne missions, or single dogfighting.

**\$44**

### SIMANT

SimAnt, the latest simulation game from Maxis, puts you in command of an ant colony out to conquer a suburban backyard. You directly control one ant & manipulate the composition and behavior of your colony to overcome rival ants, hungry spiders, and human feet, in order to reach your goal-the house and its abundant food supply.

**\$37**

### WHERE IN THE WORLD IS CARMEN SANDIEGO?

Players are introduced to world geography. Carmen and her notorious band of thieves are on a worldwide crime spree. Using your crime computer at the Acme Detective Agency, you'll gather facts before embarking on an international chase through the beautiful capitals of the world.

**\$15**

### BATTLECHESS

Animated chess pieces fight over the squares. Pieces represent medieval figures. Colorful figures. Colorful animation and digitized sound can be toggled on/off. Strong chess algorithm for those who want to concentrate on the game.

**\$31**

### PROJECT X

Experience hard-hitting shoot-'em-up action in the best Arcade action the Amiga has to offer. Five levels, brilliant music and incredible speech effects, and it's superfast and supersmooth. Full screen with 32 color graphics. Massive End-Of-Level Aliens! Awesome bonus sections.

**\$18**

### DESERT STRIKE

With a fiery blast from your Hydra Rockets you must annihilate the military arsenal. Take out tanks, chemical weapons plants, airplanes and SCUD's. Get debriefings and plan missions on detailed maps. Pick-up fuel, manage weapon supplies and feel the power of modern, multi-million pound attack chopper.

**\$34**

### PINBALL FANTASIES

Enjoy four new table layouts including Partyland, Billion Dollar Game Show, Speed Devils, and Stones n Bones. More fun than never.

**\$31**

### SIMLIFE

Build your own ecosystem from the ground up and give life to creatures from the depths of your imagination. Design plants and animals to influence how they look, act and eventually evolve. Test their adaptive abilities by turning their environment into a paradise where life is easy or a wasteland where only the strongest survive.

**BOTH \$39**

### B-17 FLYING FORTRESS

Flight simulation of the Second World War's legendary aircraft. You'll be dazzled by the graphic detail and period atmosphere. From customizing a bomber with your choice of nose art to the breathtaking air combat sequences.

**\$40**

### ARABIAN NIGHTS

Sinbad Junior gazes upon the beautiful Princess Laila as she stands on a balcony high above the gardens, as the evil Vizier kidnaps the princess and casts a mighty spell over the kingdom. Sinbad is then hurled into prison by the palace guards on a charge of sorcery. Now taking on the role of Sinbad Junior, you not only have to escape the palace dungeons, but rescue Laila.

**\$31**

### SECRET OF MONKEY ISLAND 2

Visit the graves of pirates of yesteryear and dig them up. Buy the friends you've wanted. Keep hands and feet away from food intake area. Behind every fearsome pirate is a really gnarly chair. Find the big treasure before LeChuck, the Ghost Pirate, finds you.

**\$38**

### DARK SEED

Full color Hi-Res graphics, realistic voices & sound effects. Movie like storyline with twists.

**\$47**

### A-TRAIN plus CONSTRUCTION SET

Cities all over the world are masses of idling, polluting, honking cars. We need mass transit-but local, state and national governments haven't been able to make it work. Manage the railroad, develop the most efficient and profitable routes & schedules. Borrow from the bank, buy and develop land, then expand your holdings. Build a financial empire!

**\$44**

### OUT OF THIS WORLD

As scientist Lester Knight Chaykin, the player is hurtled through space and time by a nuclear experiment gone wrong. The player must dodge, outwit, and overcome a host of alien monsters and deadly earthquakes. Only a perfect blend of logic and skill will get the player past the deadly obstacles that lie in his path.

**\$37**

### SPACE LEGENDS

The complete space experience includes Wing Commander, Mega Traveller 1, and Elite Plus. No other game package offers you so much excitement. This game package contains the best Space-flight simulation and science fiction entertainment.

**\$39**

### ELVIRA II THE JAWS OF CERBERUS

Rescue Elvira from the ghoulish Cerberus, the 60 ft. tall, 3-headed demon who has found its way into our dimension and now holds her captive somewhere in the depths of a huge film studio. Spooky animated graphics, a haunting original soundtrack and a transparent interface completely embody the player to experience a first class horror movie.

**\$25**

### NIPPON SAFES inc.

In the slums of the Japanese metropolis of Tokyo, a shady character wanders around looking suspicious. Discover what this mysterious person is up to by helping Doug Nuts, the crafty philosophical thief, by taking advantage of the perturbing Lady vate or putting yourself in the shoes of Dino Fagioli, the knocked about boxer.

**\$38**

### JAMES POND 2

Dr. Maybe's dangerously fishy plans for world domination continue. In a slimy effort to sabotage the world's largest toy factory, he has planted penguin-bombs in toy factories inside the North Pole! James Pond bubbles to the rescue as RoboCod in another massive oceanic adventure!

**AGA \$31**

### THE LOST VIKINGS

It's just another cool day of Nordic seafaring and pillaging when Erik the Swifto Balgoy the Fiercely™ and Olat the Stout™ are suddenly sucked into an alien spaceship. And only you can help them find their way home. Each mysterious door you help them through throws them into different eras in time and smack into new enemies!

**\$36**

### COMBAT AIR PATROL

Experience the adrenaline-rush of supersonic combat. Feel the heat of your afterburners in the definitive arcade-action strategy/simulation game. As Commander in Chief of Allied Forces and frontline fighter pilot, you'll have more than your hands full in this unique simulator and strategy game.

**\$31**

### HIRED GUNS

You and your team of special agents take on one mission after another of revenge, elimination, and other covert operations. You pick your team for their special talents and your success or failure will depend on you and their ability to do their job.

**\$40**

### POOL

3 sets of rules for 8 or 9 ball play in 8 player tournaments. Trick shot table. Choose from 20 true computer controlled opponents.

**\$34**

### WORLDS OF LEGEND

Take control of the Assassin, Berserker, Troubadour, and Runemaster as they enter the mysterious Empire Of The Moon. Your quest-vengeance for the murder of the Assassin's father, the Emperor of Imperia. Track down the Sorcerer I-Mann Mochun, once the Emperor's aide, now your deadly enemy.

**\$32**

### FALCON

Controls, heads-up display and radar conform to current avionics of the F-16A. Game includes 12 missions which vary from air to ground bombing runs to dogfighting up to three enemy MiGs at a time. So realistic, Falcon is being used in a military crew training program.

**\$31**



# IES • GAMES • GAMES

## FLASHBACK \$36

THE FACTS: Unquestionably the most eagerly awaited game for years • Stunning 24 frame per second screen updates resulting in superb animations • The smoothest, most lifelike characters ever seen • Unrivaled graphic qualities • Addictive formula combining strategy and speed with initiative and reflexes... • Compelling movie atmosphere. THE RESULTS: Undoubtedly the best game of its kind.

## SYNDICATE

In the dark and twisted cities of tomorrow, Syndicates compete for global dominance. But in the future there are no board-room deals, no corporate takeovers, no politics - just the dreadful justice of a gun toting machine who knows no remorse.

**\$38**

## HISTORY LINE 1914-1918

Strategy war game simulation set in the First World War period. 1 or 2 player.

**\$44**

## WHALE'S VOYAGE

Explore the Alien planets of the 24th century, with their sinister worlds and cities inhabited by strange sometimes violent people. Learn to tell friend from foe, as you try to outwit traders with your merchandise, the competition can be intense, but the rewards are great. As you strive to financially secure your race.

**BOTH \$38**

## PINBALL DREAMS

Fast and furious action packed electronic pinball. Four table layouts including Ignition, Beat-box, Steel Wheel, and Nightmare. Smooth 50 frame/second scrolling play for one to eight players.

**\$25**

## CIVILIZATION

High in the Andes, a biting wind howls through the Incas' ruined strongholds. Half a world away, the Pharaoh's tomb, the Roman Colosseum decays. Everywhere, you see remnants of societies that thought they would endure forever. All are dust. But yours could be different. You are the one person in history who builds an empire that never falls.

**BOTH \$44 AGA \$50**

## BLACK CRYPT

Estroth, master of death, has sent a shambing skeletal army on a hideous mission of vengeance. They are to seek out the descendants of those who banished him from Astera long ago and destroy them in indescribable ways. Now you must assemble a band of adventurers to recover the lost relics that sent Estroth into exile. Only their combined power can seal this waking nightmare once again in THE BLACK CRYPT.

**\$37**

## QWAK

Fantastic super-playable coin-op style action in this fast and furious cute platform romp! Join forces with a friend or go it alone with the little green duck and defeat the bad guys single handed. With heaps of bonuses and player-rewards, a myriad of special features.

**\$19**

## 1869



Experience at first-hand the era of great political and economic change, the exodus from the old British Empire, to the finding of a better life in the new world. The age of the great Clippers and their struggle for survival against the gradual domination of the steam ship.

**AGA \$38**

## SOCCER KID

Seconds before the 1994 World Cup final was due to begin an alien of the cup-collecting kind swoops down and steals the World Cup trophy. The careless alien collided with an orbiting asteroid and the trophy was smashed into five pieces which are now scattered around the globe. Join football czar Soccer kind his quest to recover and reassemble the World Cup.

**\$38**

## BODYBLOWS



Superb gameplay with different play options-Arcade tournament & 2 player modes. State of the arts Amiga beat-em-ups.

**\$34**

## GODS

From Konami and Reregade. Ancient Greece has been taken over by the forces of darkness. As powerful Hercules, players battle through four action-packed levels to achieve immortality. Each level has three worlds of adversaries and puzzles. Progression puzzles must be solved; reward puzzles are helpful in advancing.

**\$25**

## GOAL (SOCCER)

Goal, a game by Dino Dini, offers greater depth than any other game you've seen. Huge selection of fully editable teams and league system, four pitch views, enhanced graphics, and atmospheric spot sound effects. Every player has 8 carefully selected attributes. Slow-mo savable action replays. Precise control of corners, throw-ins and free-kicks.

**\$37**

## CHAOS ENGINE



Shoot-em-up action. Choose characters & weapons. 16 levels loaded with traps, puzzles, secret passages, & hordes of monsters to get to the Chaos Engine. 1 & 2 players.

**\$34**

## LEGEND OF KYRANDIA

Kyrandia, a fantasy land where rubies grow on trees and magic abounds. Who would imagine that a land so idyllic would lead one to murder? Some say that the court jester Malcolm was mad to begin with. Others that it was the burning desire to possess the precious Kyragem that slowly unhinged his mind & led him to slay King William, the sole protector of the powerful gemstone. As the rightful prince of Kyrandia, you pursue Malcolm & recover the Kyragem.

**\$38**

## BLADE OF DESTINY

The proud Thovians of Arkana's Northern Reaches face a dismal future. Rumors abound of a waiting army, banded together under one powerful Orc Chieftain, standing ready to lay waste Arkana's towns & villages. All hope rests on your ability to discover a legendary artifact thought lost with its wielder in the midst of Orcish territory. Can this renowned sword, the Blade of Destiny, stop the sieg?

**\$48**

## ISHAR 2



Following the incredible success of ISHAR, Simanis bring you a new, unmissable RPG, even closer to reality! Exceptional 3D graphics, interior and exterior views, dungeons, tree-cities, mountain-paths with real graded height effect, medieval towns with a unique mix of locations. Gigantic play area. Several hundred characters.

**\$38**

## LEANDER



In Leander you are the hero and savior of princesses. Travel across three danger-fraught worlds, fighting powerful enemies, & finding & using spells, potions & weapons to your advantage to save Princess Lucanna.

**\$31**

## LIONHEART



Medieval warrior action with colorful animated backgrounds.

**\$34**

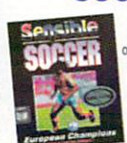
## SLEEP WALKER



Sleepwalking Lee & his faithful mutt, Ralph, travel a variety of settings as Ralph tries to keep his master from coming to any harm.

**\$44**

## SENSIBLE SOCCER



Take charge of your favorite team from all over Europe in a host of different competitions. 1 and 2 player action.

**\$39**

## WORLD CIRCUIT GRAND PRIX



Fend off challengers in the Phoenix Grand Prix. Overtake rivals on the streets of Monaco. Execute a savage hairpin turn on the Suzuka circuit. World Circuit offers you all 16 of the Grand Prix's demanding racetracks in accurately 3-D representations with variable weather and track conditions.

**\$37**

## GLOBAL GLADIATORS



Strap on your GooShooter and join Mick™ and Mack™, the Global Gladiators™, on a quest to neutralize the Monsters of Slime World, The Mystical Forest, Tux-Town and Artie World. Check out the bodacious backgrounds, the 1,250 awesome animation frames, and the most spacious sound around!

**\$39**

## OVERDRIVE



Experience arcade quality action in this fast paced overhead racing game. Take the driver's seat in 4x4 Buggies, Supersports and G.P. Cars and race around twenty gruelling courses across five different terrains. Up against the clock and the skills of eight of the meanest drivers in the world, your aim being to achieve top rank and take part in the race-off of a lifetime!

**\$39**

## TROLLS AGA



Trolls is loaded with tons of action, collectables and surprises. It's a game you won't want to stop playing and it's just like having your very own coin-op arcade machine. Hour upon hour of awesome console action on 32 levels. Eye popping Graphics and Ear Rumbling Sonix.

**AGA \$34**

## SUPERFROG \$34



Curses! The evil old witch has done it this time... she's gone and turned the prince of the magic kingdom into a bright green frog and made off with his loved one... After drinking a strange and powerful elixer, he is transformed into the legendary Superfrog! With boundless courage & determination, he sets off toward the magic forest to get back his girl, vanquish the curse, and give the nasty old witch just what she deserves.

**\$34**

## DOGFIGHT

Dogfight is the first pure air combat simulation from MicroProse: one-on-one action, duelling for supremacy in famous aerial conflicts. This is your opportunity to learn eighty years of air war skills in one simulation. From flying a WWI Fokker Triplane to a modern Fighting Falcon, you'll experience heart-thumping thrills as your opponent tries to position himself in your six. No room for mistakes; one small error and you're history!

**\$44**

## MEGAFORTRESS



MegaFortress, a nearly invisible attacker, carries enough firepower to destroy the most heavily defended targets. Features modified B-52H Stratofortress aircraft with state-of-the-art sensory apparatus, weapons systems, radar, and 3-D terrain mapping. Choice of 31 missions and three theatres: Desert Storm, Eastern USSR, and USA Red Flag Training. You play several roles simultaneously.

**\$44**

## FIGHTER DUEL PRO

A professional package for the serious aviator. Included among the 16 Allied and Axis aircraft are Mustang, Spitfire, ME109, and futuristic Japanese J7W Shinden. Connect second computer through main flight computer's parallel port via special FDPro Parallel Adapter which continually displays view to rear of aircraft.

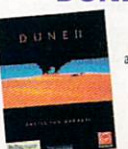
**\$37**

## THE PATRICIAN

Set over two centuries of European history "The Patrician" is an epic saga of power and money. As a successful Patrician you must rise to the top of the mighty Hanseatic League, the most powerful commercial organization of the time. In your quest for power and wealth you must run an international trading organization and become a social and political force in your community.

**\$41**

## DUNE 2



Behold the planet Arrakis, known as Dune - Land of Sand and home of the Spice Melange. The Spice controls the empire - whoever controls Dune controls the Spice.

**\$36**

## ALFRED CHICKEN BLASTAR



As the worlds only chicken with a bionic beak, Alfred is whisked off to a multitude of bizarre lands to pluck his friends from the clutches of their foul captors.

**\$33**

## BLOB



Imagine a universe of a different dimension - a dimension of height, of ground, of gravity and time. Here life is but a bounce away from oblivion for Blob Guide Blob through 50 boxing levels of bouncy crazy puzzles, find all the spaceship parts and rescue any Bloblets that have become lost or trapped. Live life on the edge - experience Blob.

**\$33**

## TRODDERS



Hokus and Pokus have done it again. They let all the Trodders escape who promptly made a bee-line for the teleporter door. Any number of disasters could befall them on the other side - so they'd better be returned safely before the Grand Sorcerer Divinix finds out what's happened.

**\$39**

## SPACE HUNK



A derelict spaceship is infested with Genestealers™. Immensely fast, immeasurably strong, these insectoid beasts from hell breed by planting their genes in living humans. Bolt on your power armour and awesome weaponry. You're going in.

**\$38**

## YO JOE



The "Black Sect" is a secret society whose aim is absolute world domination. Accompany Joe and Nat through 8 gigantic levels with hundreds of opponents, against these evil villains.

**\$38**

## OVERKILL



12 different stages. Hundreds of intelligent hybrid aliens. Multi-directional scrolling. Fully animating backgrounds. 300K of hardcore techno trance music. 200K of sound effects. Multi-layer parallax. 3 Megabytes of graphics. Over 400 screens of playing area. State of the art alien control.

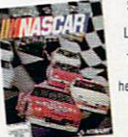
**\$35**

## OVERKILL \$26

A decision has been made by the high council of the federation. You, as captain of the "NU-CORPS", the most feared and elite fighter corps in the federation star system, must lead the attempt to drive a wedge between the two warring factions, until the larger fleets can arrive and stabilize the region. Have you got what it takes to stop the Overkill?

**AGA**

## NASCAR CHALLENGE



Strap yourself into the roll cage of a Chevy Lumina, Pontiac Grand Prix or Ford Thunderbird. Then get ready to go head to head with Bill Elliott and a field of NASCAR's finest. On screen statistics tell you course length, maximum banking and the total number of laps in each race.

**\$21**

## DEEP CORE



An unidentified object approaches Earth at high speed. A weather satellite detects it entering the Earth's atmosphere. The hunt begins. Now it is up to DawnRazor to eliminate all hostile alien activity before disaster strikes. Tremendous shoot em up.

**\$33**

## BIRDS OF PREY



By Arponaut Software. NATO and Soviet forces in an all-out war campaign. Armed with 40 front line aircraft, your mission is to devastate the enemy's land, sea, and air forces while protecting your own. Accurate flight dynamics & weaponry let you experience every aspect of modern air combat. Choose NATO or Soviet forces; view the action from allied or enemy aircraft at anytime.

**\$37**

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## BARNEY BEAR MEETS SANTA CLAUS

Barney Bear Meets Santa Claus, a learning game for children 2-6 contains a memory game, a mix-up-the-parts toy machine, and a coloring book program.



\$9

## AMIBACK+ TOOLS

The solution for all your data backup needs! You have complete control over the backup process. It's both powerful and flexible. Plus, you get Ami-back Tools. Keep your disk drives performing flawlessly.

\$69

**AMIBACK TOOLS \$44**  
A Collection of the best utilities available to keep your disk drives performing flawlessly! Whether optimizing your disks for speed or recovering lost files, Ami-Back Tools makes the job a snap.

## QUARTERBACK 5.0

Upgrades & enhancement are based on user requests. New integrated streaming tape backup, compression, new backup and restore option, optional password protection and encryption.



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## QUARTERBACK TOOLS DELUXE \$69

You can restore files that have been accidentally deleted, find bad blocks on disks and keep them from being used, and even salvage files from badly damaged disks. Optimize the arrangement of files on your disks, speeding file access!

## PROWRITE 3.3

Word processor has print preview, automatic text flow around graphics, vertical rulers, password protection, picture naming and searching, more. Also has Hotlinks support so you can interchange your documents with other applications for integrated word processing and DTP. AmigaDOS 2.0 compatible.

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## INVOICE-IT!

Inexpensive & powerful invoicing for the Amiga! Design your own invoice. Reports include registers, acc. rec., invoice & cash receipt summaries.

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## TV PAINT 2.0

True state of the Art in Amiga 24 bit paint packages. The many features of TV Paint 2.0 include image manipulation, Drawing Tools, Emboss, Sharpen, Relief, Outline and much, much more.

\$349

## CROSS DOS

MS-DOS file system. Allows user to transparently access MS-DOS or Atari ST formatted disks from any application or utility including file requesters. Fully integrates. Perform virtually all DOS functions on standard Amiga hardware.

\$33

## OPUS

A full-featured, multi-functional directory utility. Directory windows for file copying, deleting, renaming, & so on. IFF pics, brushes and ANIMS that can be viewed, sound files played, text files read, and executables launched.

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## FINAL COPY II

For high quality print-outs of personal and business documents. Combines traditional word processing features with state-of-the-art printing technology. Includes 34 outline typesets, a 1.4 million word spell, a 144,000 synonym thesaurus with definitions, graphics support & more.

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## PROPER GRAMMAR II \$56

First language-aid system that corrects documents by identifying the grammatical function and relationships among words. Solves frustrating problems and makes the most of your writing skills.

## ADDRESS-IT!

Create mailing lists, rosters, envelopes, labels, rotary cards & more! Powerful search and sort routines, + mail-merge with popular word processors.

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## MAXIPLAN 4

Integrated spreadsheet/database. Compatible with Lotus 1-2-3. Store text & numerical data, perform analysis, calculations, display results graphically.

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## PAGESTREAM

Features enhanced import module and printer driver support, providing users with a wider selection to choose from. Support for plotter, allowing sign cutters as well as plotters to output documents. Has improved Type 1 extended character set support, and offers a faster font/point dialog.

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## typeSMITH

Create bitmap and outline fonts for all your programs! Convert and edit!

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\$149

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Full-featured outline illustration program. Allows artist and graphic designers to create complex, artistic illustrations that can be scaled and used at any size without quality loss. Support fonts for Adobe Type 1 outline fonts. 2 objects can be blended together; color and line styles can also be blended. Groups/Ungroups, Locks/Unlocks, Flips and aligns objects. Rotates objects.



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Professional business spreadsheet & graphics package. Over 125 statistical, trigonometric, financial & user definable functions. Graphic interface.

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Brings desktop astronomy and space travel to any 1MB Amiga with at least 2 floppy disk drives. AREXX support, multiple resolution support (interlaced & overscan), animation capability, full screen (not overscan) astrological photo display keyed to selectable objects.



## MAVIS BEACON Teaches Typing!

Check progress, lesson by lesson, every step of the way. True artificial intelligence software dramatically improves your typing skills with a personalized typing course created to meet your individual needs.



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## DISCOVERY

MATH & SPELLING An interactive, educational space adventure. Your job is to fix broken-down starships in the vastness of space. To do this you'll have to be fast on your feet, but you'll also have to use your knowledge and intelligence to solve the puzzling problems posed by the ship's security computer.



\$17

## The DISNEY collection

### MICKEY'S MEMORY CHALLENGE

Concentrating is kid's play. Flip the cards and see if you can match up words, objects, or Disney characters. Fun visual play for younger, pre-reading children and helpful memorization and vocabulary building exercise for older players.

\$34

### MICKEY'S JIGSAW PUZZLES

Join Mickey and the gang on horseback rides, outerspace journeys, deep sea dives, haunted house tours - 15 colorful in all - when you've locked every piece into place, roll camera and watch your favorite character come to life.

\$34

### MICKEY'S ABC's

The most fun way to learn with a friend and Mickey Mouse is every child's best friend. Introducing preschool children to the world of letters and words. Encourages the child to learn for hours while having fun.

\$34

### MICKEY'S 123's

Mickey has arrangements to make for the surprise birthday party he is planning for one of his friends. Set off into town to make the preparations. Easy-to-use entertaining program. Children learn by exploring at their own pace. Any NUMBER KEY pressed makes something fascinating happen.

\$34

### MATH WIZARD.... \$25

Ages 5-13, one or two players. 4 educational games with animated graphics make learning math fun. Can be customized for each child's ability. Features multiple difficulty levels, addition, subtraction, multiplication, division, simple equations, fractions, decimals, percents, and word problems too!

### VOCABULARY QUEST IN LAND OF THE UNICORN..... \$25

Ages 8-13 Learning Adventure in Synonyms, Antonyms, and Logic 3 activities & great graphics make a captivating learning experience. Synonym & Antonym reviews & quizzes & The Quest for the Silver Unicorn.

### READ & RHYME..... \$25

Ages 6-12, one or two players. Boost important reading, alphabetizing, rhyming, vocabulary, and phonetic skills while your children delight in learning as they interact with exciting shape creatures.

### ALL ABOUT AMERICA..... \$25

Ages 6-11, one or two players. American history for young children. Introduction to America's fascinating past. Each of the 16 stories features easy-to-read text enhanced by beautiful graphics.

### DECIMAL DUNGEON \$25

Ages 9 & up, one or two players. While trapped inside the Dungeon Master's crystal caverns, the only way to escape is by answering math problems correctly. Each player can choose his/her own difficulty level while learning math in this arcade-style action-packed program.

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## BRILLIANCE

Brilliance is a powerful and intuitive paint package. Features include: well laid-out user interface, extremely fast operations, multiple picture and animation buffers, multiple levels of undo/redo real world airbrush, much more. Supports all Amiga graphic modes including 24-bit, 320 color, and 8 bit HAM. Requires 1mb RAM min., more recommended. Supports new graphic modes of the A1200 and A4000.

\$139

## DELUXE PAINT IV

New AGA Version Lighttable lets you see through the frame you're currently working on; Metamorphosis, transforms shape and image of one brush into other brush; New Animation Control Panel, Color Mixer, Stencil Mode for control of image processing & manipulation. Rich tinting & translucency for special effects.

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## ART DEPT. PROFESSIONAL 2.3

Offers JPEG image compression technology which dramatically decreases the space consumed by 24-bit plane images. Large numbers of hi-res images can be stored in true color by compression to as little as 1/80 of original size.

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### WORD MASTER VOCABULARY BUILDER... \$25

Ages 8-14 Word Essential Word Power Skills! 4 activities designed around a data base of words correlated to 3rd - 8th grade curriculum. Vocab Test to determine ability level and monitor progress. Master's Review, Vocabulary Challenge, & the Master's Maze Game.

### WONDERS OF THE ANIMAL KINGDOM..... \$25

Ages 6-12, one to four players. Six outstanding learning activities teach your children about the wonder of the animal kingdom while developing their language arts, reading comprehension, discrimination, and memory skills.

### THE LOGIC MASTER \$25

Ages 10 to adult. Aims to develop critical high-level thinking skills through a broad variety of analogy and number series activities.

### AESOP'S FABLES... \$25

Ages 8 & up, one or two players. Children will enjoy reading each of these 12 charming age-old fables depicted with stunning graphics and large easy-to-read text. 4 activities.

### FRACTION ACTION \$25

Ages 8 & up, one or two players. Multi-screen arcade action and sound educational content: a winning combol Choose addition, subtraction, multiplication, & division of fractions on one of 3 difficulty levels.



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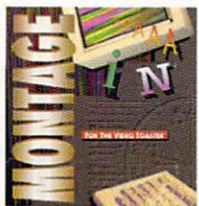
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## MONTAGE



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## VISTAPRO 3.0

Importation of more data into ea. picture frame than original VistaPro. Greatly increasing the possible res. of the final rendering. Oak, pine, palm, cactus, and sagebrush can be added to any scene in varying mixes and densities. Ig. & sm. buildings, roads, sunsets. The final effect is to produce a pic of unsurpassed realism.

**\$56**

## PIXEL 3D PRO

Powerful 3-D object utility for the Amiga. Use to convert a bitmap into a 3-D object by extruding it (giving it depth). Offers several extrusion options that let you make 3-D objects quickly, easily and accurately.

**\$129**

## ALADDIN 4D

Revolutionary 3D modeling, rendering & animation package. Zoom, rotation controls, unlimited lights, paths, wave sources, gases.

**\$249**

## REAL 3D v.2

3D animation, modeling, and rendering program. Skeletal control. Hierarchical animation construction. Depth of field, Unlimited number of texture and material definitions per object. Measuring system and grids for accurate modeling.

**\$399**

## GVP500 HD

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80 MB HD **\$339**  
170 MB HD slot for PC286 Module **\$429**

## GVP 530 Turbo

up to 8 mb 32 BitRam  
40 mHz 68030  
Socket for FPU with 170 mb HD **\$629**



## 501-S Memory+Clock

512K RAM, Clock/Calendar with battery backup.

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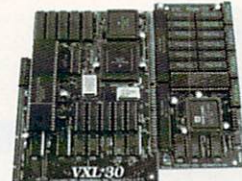
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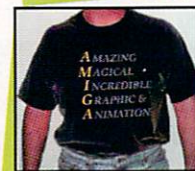


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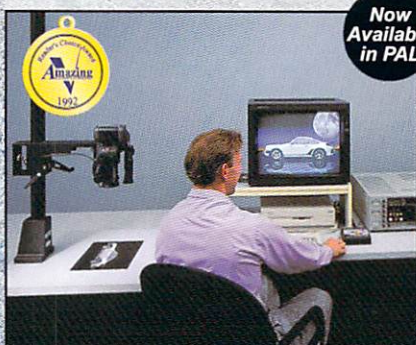
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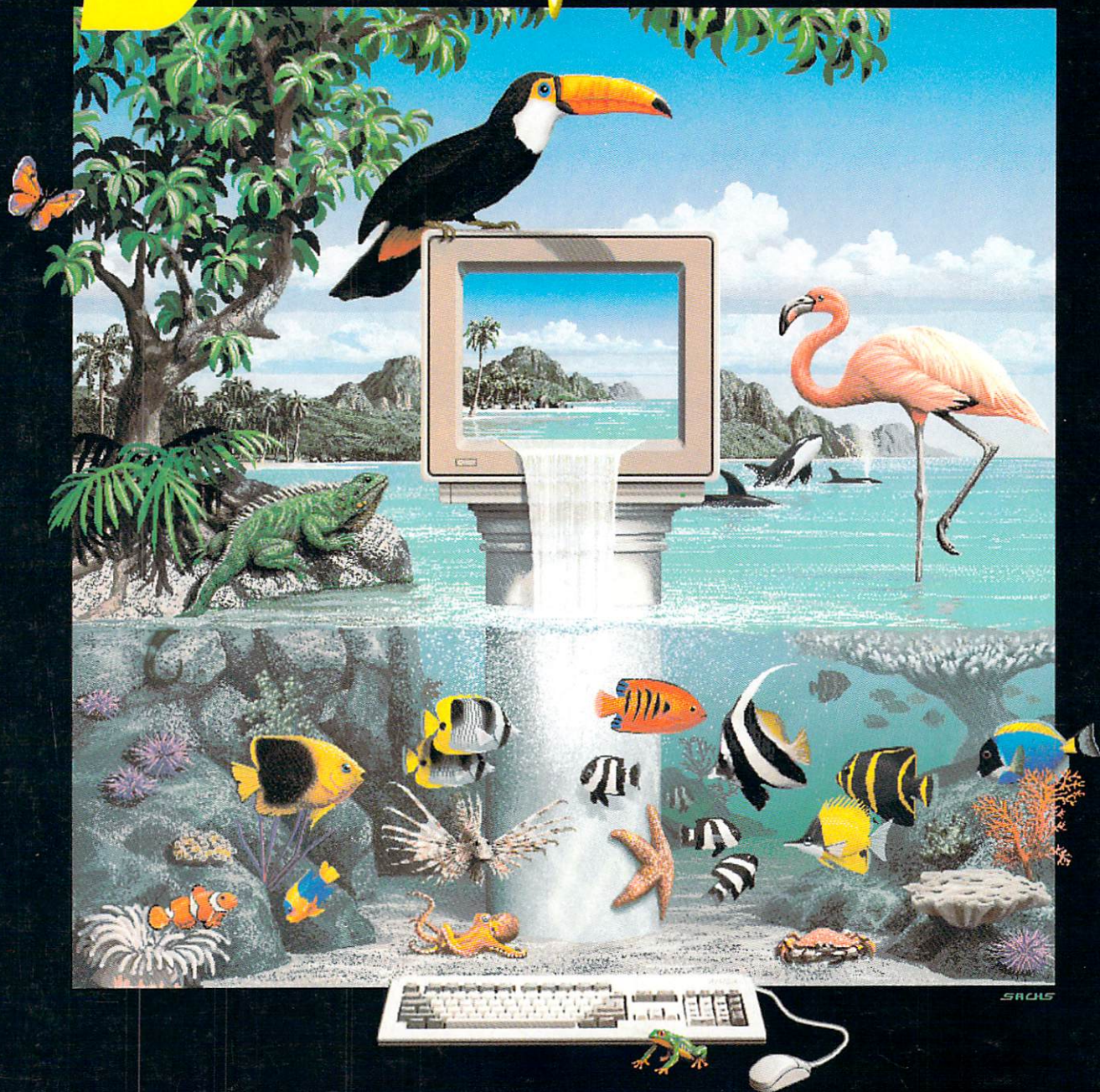
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